MTNC040314C1
B19 Canada:B05

Service Manual

Color Television

CT-32HC14J / CT-32HC14UJ
DX4M

Panasonic®

1. Safety precautions

General guidelines

An isolation transformer should always be used during the servicing of a receiver whose chassis

is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injuryfrom electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing. When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always replace protective devices, such as fish paper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautionswhen servicing high voltage equipment.

Extreme care should be practiced when handling the picture tube. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, usesafety goggles and heavy gloves for protection. Discharge the picture tube by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a wellinsulated wire or use a grounding probe.Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x ray radiation.

The test picture tube used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x ray radiation as well as implosion. The magnetic shieldlimits the x ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 50kV without causing x ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. Do not use a line isolation transformer when testing.

Leakage current cold check

Unplug the A.C. cord and connect a jumper between the two plug prongs.Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a returnpath to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

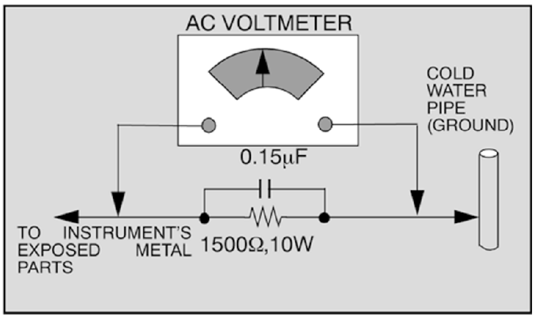
Leakage current hot check

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check. Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15 μF capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts. Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. Ifany measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.

Hot check circuit



Insulation test

Connect an insulation tester between an exposed metallic part and A.C. line. Apply 1500VAC/60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.

X ray radiation

WARNING
The potential source of x ray radiation in the TV set is in the high voltage section and the picture tube.

NOTE
It is important to use an accurate, calibrated high voltage meter.

Set the brightness, picture, sharpness and color controls to minimum.
Measure the high voltage. With a 480i signal the high voltage should be 33.0kV ± 1.0kV and with a 1080i signal the high voltage should be 33.0kV (+ 1.0kV, - 2.0kV). If the upper limit is out of tolerance, immediate service andcorrection is required to insure safe operation and to prevent the possibility of premature component failure.

Horizontal oscillator disable circuit test

This test must be performed as a final check before the receiver is returned to the customer. See horizontal oscillator disable circuit procedure check in this manual.

2. Service notes

NOTE
These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless chip component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board,however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code, 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6k Ω resistor, 0 = 0 Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

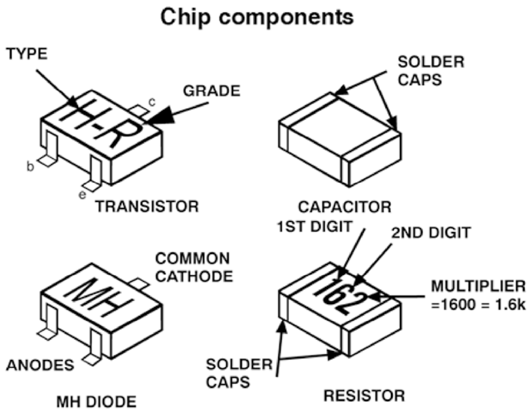
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component removal

1. **Use solder wick to remove solder from component end caps or terminal.**
2. **Without pulling up, carefully twist the component with tweezers to break the adhesive.**
3. **Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.**

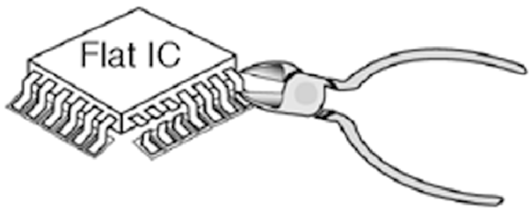
Chip component installation

1. **Put a small amount of solder on the board soldering pads.**
2. **Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.**

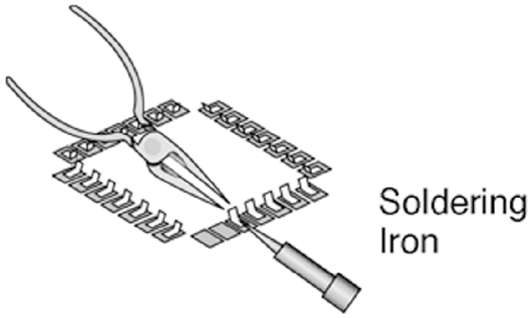

Chip components
TYPE
GRADE
H-R
c
b
e
TRANSISTOR
SOLDER
CAPS
CAPACITOR
1ST DIGIT
2ND DIGIT
COMMON
CATHODE
MH
ANODES
MH DIODE
162
MULTIPLIER
=1600 = 1.6k
SOLDER
CAPS
RESISTOR

How to replace flat ic (required tools)

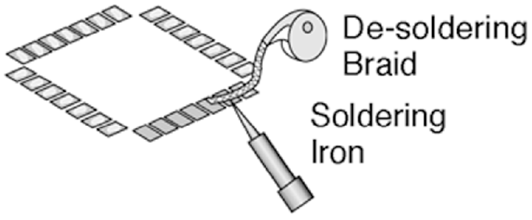
1. Remove the solder from all of the pins of a Flat IC by using a desolder braid



2. Put the iron wire under the pins of the Flat IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.

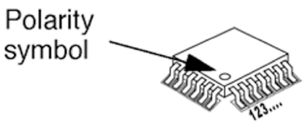

Soldering
Iron

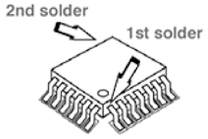
3. Remove the solder from all the pads of the Flat IC by using a de solder braid


De-soldering
Braid
Soldering
Iron

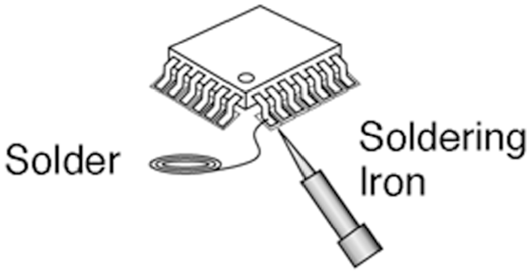
4. Position the new Flat IC in place (apply the pins of the Flat IC to

the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol

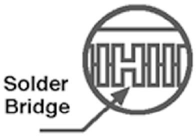


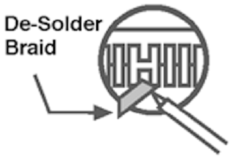


5. **Solder all pins to the soldering pads using a fine tipped soldering iron**



6. **Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de solder braid as shown in the figure below**





IMPORTANT

To protect against possible damage to the solid state devices due to arching or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION

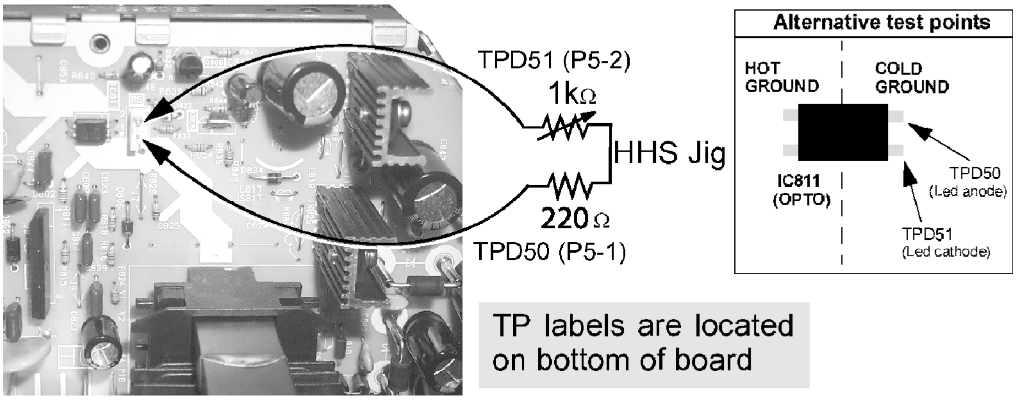
The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground(hot) or (cold) when servicing, or incorrect voltages will be measured.

WARNING

This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol on the schematic must be replaced with identical parts. Order parts from the manufacturer's partscenter using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.



TP labels are located on bottom of board

HORIZONTAL OSCILLATOR DISABLE CIRCUIT

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillatorthat limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, theoperation of the circuit should be checked using the following procedure:

Equipment needed to check the disabled circuit:

1. **High voltage meter (0 ~ 50kV)**
2. **Variac or isolation transformer**
3. **1k ohm VR**
4. **D.C. ammeter**

PREPARATION

1. **Connect receiver to A.C. 120 Volts. Do not turn ON.**
2. **Connect HIGH VOLTAGE meter to 2nd anode (H.V. button).**

NOTE

Use cold ground for negative lead.

3. **Connect the ammeter serial from the flyback anode lead to the picture tube anode socket.**
4. **Prepare HHS jig to be connected between TPD50 and TPD51 on P-Board as shown above.**

PROCEDURE

1. **Open connector A17.**
2. **Turn power ON and apply a white pattern.**
3. **Set current within 50-100 μ A by changing the picture and bright controls.**
4. **Turn power OFF.**
5. **Connect HHS jig between TPD50 and TPD51 on P-Board as shown above (VR should be turn fully clockwise).**
6. **Turn power on.**
7. **Using the variable resistor slowly increase the current until the horizontal sync frequency abruptly increases indicating that the horizontal frequency is just beginning to pull out of sync. Maintain the current within 50-100 μ A bychanging the picture and bright controls**
8. **Observe the high voltage meter. High voltage should read less than 38.10kV.**
9. **Turn power OFF, remove HHS jig, HV meter, ammeter and connect A17 connector.**
10. **Turn power ON. Reset PICTURE and BRIGHTNESS controls. Confirm B+ 144V±1.5V with 120V AC applied.**

NOTE

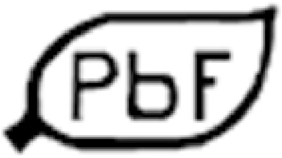
If high voltage is not within the specified limit the cause must be determined before the receiver is returned to the owner.

3. About lead free solder (PbF)

NOTE

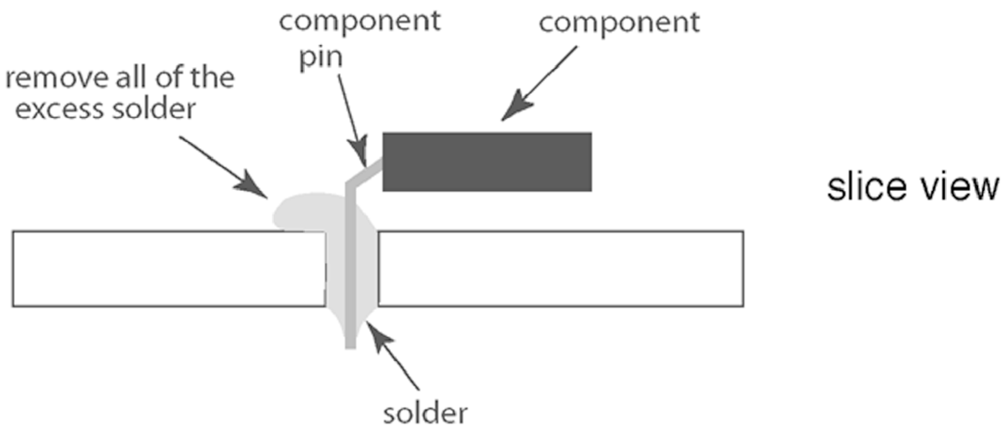
Lead is listed as (Pb) in the periodic table of elements. / In the information below, Pb will refer to lead solder, and PbF will refer to Lead Free Solder. / The lead free solder used in our manufacturing process and discussed below is (Sn+Ag+Cu). / Thatis Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it’s manufacture due to environmental conservation issues. For / service and repair work, we’d suggest the use of Pb free solder as well, although Pb solder may be / used. / PCBs manufacturedusing lead free solder will have the “PbF” or a leaf symbol stamped on the / back of PCB.



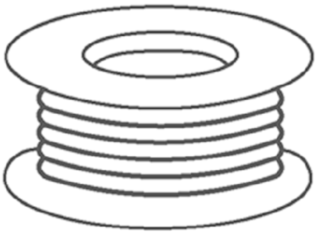
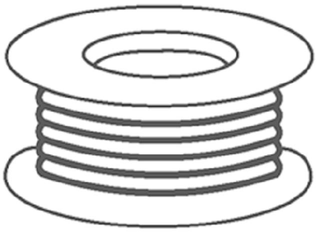
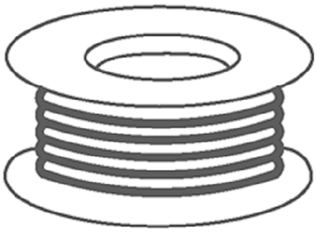
CAUTION

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). / If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If thisis not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side.


component pin
component
remove all of the excess solder
slice view
solder

Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also beused.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

4. Receiver feature table

FEATURE/MODEL	CT-32HC14J/UJ
CHASSIS	AP421
MICRO	256K
MENU LANGUAGE	ENG/SPAN/FR
CLOSE CAPTION	X
V-CHIP (USA/CANADA	X
CHANNEL INFO BANNER	X
VIDEO INPUT SKIP	SKIP
CHANNEL COUNT	181
PIP (1T), 2T PIP (2T), 2T SPLIT	NO PIP
REMOTE CONTROL (W/LIGHT)	EUR7613ZB0
CRT SUPPLIER	MTPDA
FAMILY	DX4M
COMB FILTER	3 LINE
HEC/VEC (X=BOTH)	X
VM	X (SELECTABLE)
V/A NORM (X=BOTH)	X
COLOR TEMP	X
AIP	X
PRESET/INPUT LABELING	X
VIDEO PICTURE MEMORY	X
DIGITAL SCAN RATE	1080i, 480p
NTSC LINE DOUBLER	480p PROGRESSIVE
MTS/SAP/DBX	X
BUILT-IN AUDIO POWER	10W X 2
No. OF SPEAKERS	2 (NO SUBWOOFER)
BASS/BALANCE/TREBLE CONTROL	X
AI SOUND	X
SURROUND	X
SPATIALIZER/BBE	BBE
A/V IN (REAR/FRONT)	4(3/1)
A/V PROGRAM OUT	X
AUDIO OUT (FAO: F, VAO:V)	F, V
COMPONENT INPUT (Y, Pb, Pr)	2
S-VHS INPUT (REAR/FRONT)	3(2/1)
DVI/HDCP INPUT	1
MISC	HPJ
WEIGHT (KG/LB)	98KG/216LB
DIMENSIONS (W/D/H) mm	1049.5/742/895

Note:
Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

5. Board description table

BOARD	CT-32HC14/UJ	DESCRIPTION
A-BOARD	TNP2AH063	MAIN CHASSIS
D-BOARD	TNPH0466AG	DEFLECTION
DV-BOARD	TNP2AA177	DVI BOARD
DG-BOARD	TNP2AA176	SEARCH, FORMATS
P-BOARD	TNP2AA148AB	POWER SUPPLY
H-BOARD	TNP2AA127AB	REAR A/V JACKS
L-BOARD	TNP2AA139AC	CRT BOARD
K-BOARD	TNP2AA143	FRONT KEY BOARD
G-BOARD	TNP2AA142AC	FRONT A/V BOARD

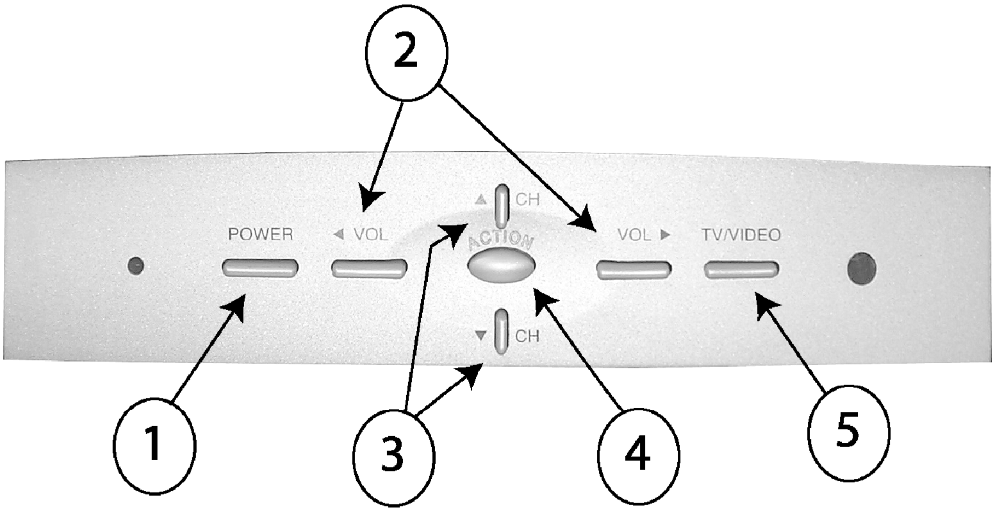
NOTE
When ordering a replacement board assembly, append an “S” to the board number

EXAMPLE
To order the A Board, the replacement board is TNP2AH063S

NOTE:
The DG-Board and DV-Board are non-serviceable boards, except for DV-Board audio connector and DVI conector. If any of these boards or DV-Board components are defective, replace it with a new one and take back the defective board to the service center.

6. TV Location of controls

Panasonic
HDTV


2
▲ CH
POWER
◄ VOL
ACTION
VOL ►
TV/VIDEO
▼ CH
1
3
4
5

	Quick reference control operation
①	**Power** - Press to turn ON or OFF.
②	**Volume** - Press to adjust sound level, or to adjust audio menus, video menus, and select operating features when menus are displayed
③	**Channel** - Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select cable converter box channels after programming remote control infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position).
④	**Action** - Press to display main menu and access on screen feature and adjustment menus.
⑤	**TV/Video** - Press to select TV or one of the video inputs

7. Location of controls (EUR7613ZB0 remote)

POWER
Press to turn ON and OFF.

TV - VCR - DBS/CBL - DVD
Press to select a component.

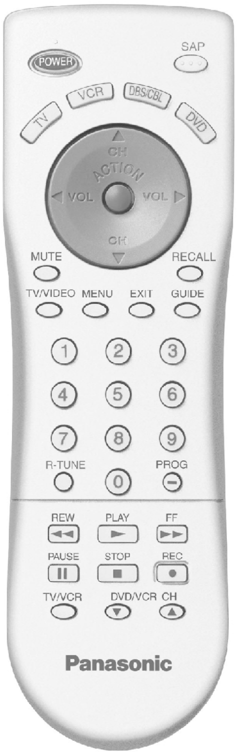
MUTE
Press to mute sound.

TV/VIDEO
Press to select TV, Video mode.

MENU
Press to select TV, Video mode.

KEYBOARD
Press to select any channel.

R-TUNE
Press to switch to previously viewed channel or video mode.



SAP
Press to acces the secondary audio program broadcast.

CH
Press to select next or previous channel and navigate in menus.

VOL
Press to adjust TV sound and navigate in menus.

RECALL
Press to display time, channel sleep timer and other options.

GUIDE
DBS and DVD functions button.

EXIT
DBS menu function button.

PROG
Press for delimiter between major and minor channel number.

Note:
For additional information about this remote please refer to the owner’s manual section remote operation, listed on the parts list section.

8. Auto diagnosis feature

This receiver incorporates a new self diagnosis feature. With this new feature will be easier for the technician to detect the failures. There is a LED located by the keyboard on the front panel, this LED will start flashing when a failure is detectedby the circuits located in specific areas,

depending on how many times the LED is flashing, this will tell you what circuit should be checked. Make a count of flashing and see the table shown below. Please use this feature effectively especially forintermittent problems.

SOS of front LED

FLASHES	POSSIBLE CIRCUIT	SOS
1	POWER+140	SOS 1
2	LOW B+ D.C.	SOS 2
4	HI VOLTAGE HHS	HHS
5	IC4511	GC2M
6	IC4518	GC2S
8	AUDIO AMP	SOS 4

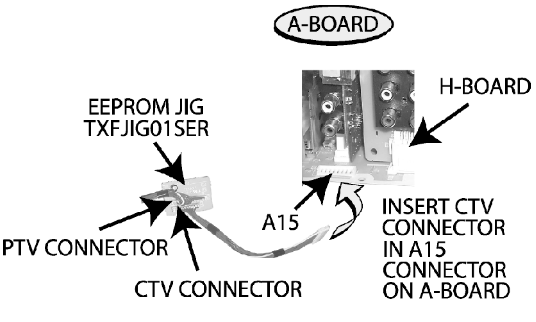
AFTER THE COUNT
Proceed to check that area, verify what board is the problem located, this way the area to check will be reduced until the failure is found.

9. EEPROM copy jig

This CTV has a feature that allows to clone or back-up main EEPROM data adjustments from a CTV to other by connecting a jig to the CTV set. A jig part number TXFJIG01SER, is available through Matsushita/Panasonic Services.

Preparation:
To connect this jig, remove the lower back cover as instructed on disassembly for service section on this service manual and insert the jig into A15 connector located on the A-Board. (See figure)

EEPROM copy jig connection



Procedure to copy data:

1. **Enter to service mode and display service menu.**
2. **Select “AREA” DAC and then press ACTION button on remote to enter. Press VOL right/left to select one of the following options then press ACTION:**

   - Select ALL to copy all main EEPROM data

  - **Select ADJ to copy only adjustment data.**
  - **Select FIX to copy only fix data**

3. **To copy data from main EEPROM to jig, select “IN → EX” DAC and press ACTION button on remote.**
4. **To copy data from jig to main EEPROM, select “EX → IN” DAC and press ACTION button on remote.**

10. Dissasembly for service

Back cover
Remove all the screws marked with an arrow (←) from the back of the receiver

NOTE
Screw configuration, type, and number of screws vary depending on the model of the receiver serviced and the application; various models are covered in this manual. Use same hardware when reassembling the receiver.

- **4 screws at the top edge of the receiver.**
- **4 screw by the A/V jacks.**
- **1 screw by the antenna jacks.**
- **1 screw at the lower part of TV.**
- **1 screw at each lower corner of the receiver.**
- **1 screw by the retainer plate of the AC power cord.**
- **1 screw by the A.C. cord assembly.**

NOTE
Extensions for board connectors may be needed to take voltages on some boards, please see parts list section for part numbers in this service manual.

A-Board - Main chassis

The A-Board assembly rest on a chassis tray along with the D-Board.
Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

1. **A-Board is secured to the chassis tray with screws.**
2. **The A-Board is mated to the D-Board by four flexible connectors: A4, A5, A6 & A7 (D4, D5, D6 & D7 on the D-Board, respectively). To remove either boards, unplug the connectors on the A-Board.**

NOTE

Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal

D-Board - Deflection

The D-Board assembly rest on a chassis tray along with the A-Board.

Slide chassis tray out. Gently lift the tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

1. **D-Board is secured to the chassis tray with screws.**
2. **The D-Board is mated to the A-Board by four flexible connectors: D4, D5, D6 and D7 (A4, A5, A6 & A7 on the A-Board, respectively). To remove either boards, unplug the connectors on the A-Board.**

NOTE

Some tie-wraps that secure the wire dressings may need to be unfastened for chassis removal

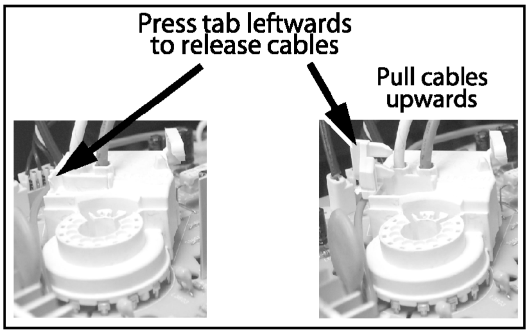
L-Board - CRT output

Plugs into the socket on the CRT neck.

To remove this board, first unplug the board from the CRT neck, then disconnect L1, L2 and L3 connectors, to disconnect the focus F1(red cable) & F2 (white cable) cables from the CRT socker, pull the tab and release the cables (see figure),finally disconnect the screen cable from the D-Board D16 (screen and heater).

To reinsert back the cables, remember the original position of cables, F1 (red cable) goes to A on the CRT socket and F2 (white cable) goes to B on the CRT socket.

F1 and F2 cables release



To release screen GND cables from L-Board L10, L11 & L12 connectors, insert a wire in both sides of connector and pull upwards the cable, then remove the wire.

DG-Board

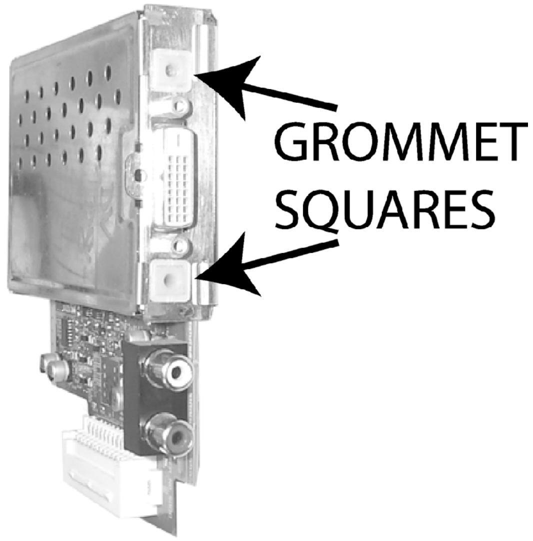
The DG-Board is assembled on the main chassis (A-Board) plugged at the A21, A22 and A23 (DG1, DG2 and DG3 respectively) connectors.

NOTE
This board is not-serviceable. / When removing this board pull carefully.

DV-Board

1. **Plugs onto the A-Board at the A5 (DV1) connectors.**
2. **This board has two Grommet squares, be careful to do not screw too tight, otherwise this grommet screw hole will get stripped.**

Grommet squares on DV-Board



NOTE:
This board is non-serviceable. Except for JK002 (DVI AUDIO CONNECTOR) and JK002 (DVI CONNECTOR) / When removing this board pull carefully.

P-Board

Plugs onto the right side of the D-Board at D2, D11, D12 and D3 connectors (P2, P11, P12 and P3 on P-Board, respectively); First remove the screws that holds the metal board, from the flyback and from the chassis tray and then use a flat head screwdriverto release the connector locking tabs and pull upwards the board.

G-Board

Mated to A-Board by three flexible connectors A1, A2, A3 and D40 from D-Board. To remove this board, first unplug the four flexible connectors, then RT1, G4 and G14 connectors, then pull upwards the board while unlock the tabs from the chassis tray.

Speakers

Each speaker is secured to a plastic base with 4 screws, and each plastic base is secured to the from cabinet with two screws.

NOTE

When reassembling speakers be sure to connect the speaker wires to the correct speaker lead (+) (-)

10.1. Disassembly for CRT replacement

1. **Discharge the CRT as instructed in the "safety precautions" section and remove 2nd anode button from the CRT.**
2. **Remove speaker modules (R and L)**
3. **Perform complete removal of chassis, as instructed in "disassembly for service" section.**

NOTE

When remounting the CRT, reuse the metal sheet located in the lower part of the cabinet holding the CRT, hold with screws to the cabinet. This metal sheet is not supplied with the CRT replacement.

CRT replacement

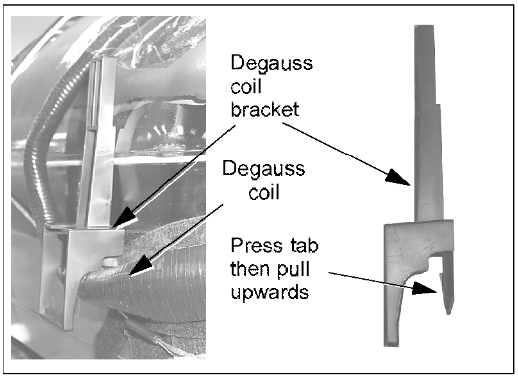
1. **Perform "disassembly for CRT replacement" procedure.**
2. **Insure that the CRT H.V. Anode button is discharged before handling the CRT. Read the "safety precautions" section on handling the picture tube.**
3. **Remove the components from the CRT neck and place the cabinet face down on a soft pad.**
4. **Note the original order for the CRT mounting hardware as they are remove from the CRT mounting brackets at each corner of the CRT.**
5. **Remove the CRT with the degaussing coil and the dag ground braid attached.**

NOTE

To remove the four brackets holding the degauss coil from the corners of the CRT, first remove

the CRT from the cabinet, then remove the brackets by pressing the tab on the bracket and pull upwards. These brackets are included in the degauss coilkit, for part number, please see parts list section

Brackets removal



6. Note the original locations and mounting of the degaussing coil and the dag ground assembly to insure proper reinstallation on the replacement CRT.
To remove and remount the degaussing coil:

- **Unhook the coil spring from the bottom corners of the CRT ears.**
- **Release the braid loop from the upper corners of the CRT ears.**

7. Mount the dag ground braid on the replacement CRT. Position the degaussing coil with new ties.
Dress coil as was on the original CRT.

8. Replace the components on CRT neck and reinstall into cabinet. Verify that all ground wires and circuit board plugs get connected.

NOTE

Reuse all the clampers and mounting brackets from the degauss coil and screen, and when remounting the degauss coil assure that is not touching the speakers, this can be done by placing some tape, this may cause mask vibration. The mounting brackets andclampers are not supplied with the replacements.

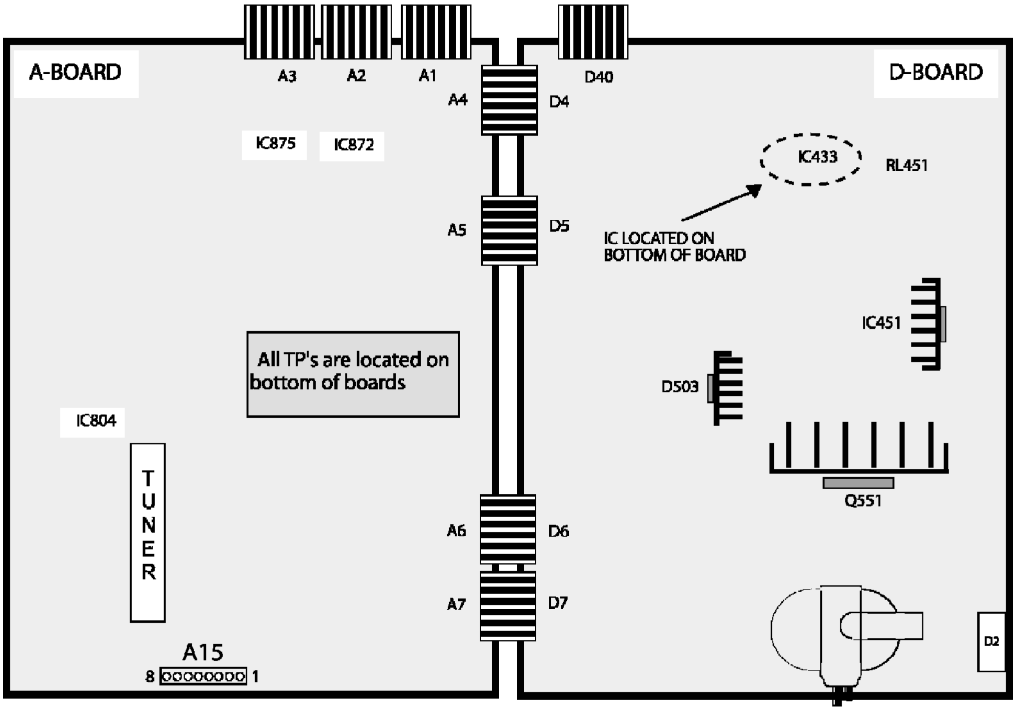
IMPORTANT NOTICE

When ordering the CRT, please order CRT and CRT kit also.
Please see parts list section for part numbers

11. Back cover removal

12. Chassis service adjustment procedures

All service adjustments are factory preset and should not require adjustment unless controls and/ or associated components are replaced.


A-BOARD
A3
A2
A1
A4
IC875
IC872
A5
All TP's are located on bottom of boards
IC804
T
U
N
E
R
A6
A7
A15
8
1
D40
D-BOARD
D4
IC433
RL451
D5
IC LOCATED ON BOTTOM OF BOARD
IC451
D503
Q551
D6
D7
D2

140.0_V B+ voltage check

1. **Set the BRIGHT and PICTURE to minimum by using the PICTURE menu.**
2. **Connect the DVM on TPD144 (D-Board by D2 connector) and cold ground**
3. **Confirm that B+ voltage is 144.0V ± 1.5V. This voltage supplies B+ to the horizontal output and flyback circuits.**

Source voltage chart

120V AC line input. Set the BRIGHT and the PICTURE to minimum by using the PICTURE menu. Use cold or hot ground for the (-) lead of the DVM as needed

A-BOARD	VOLTAGE
STBY 7V (BY IC804) A-Board TPP9	7.5 ± 0.6V
MAIN 9V (BY IC875) A-Board TPA7	9.0V ± 0.5V
MAIN 5V (BY IC871) A-Board TPA8	5.0V ± 0.3V
GC 2.5V (BY IC872) A-Board TPA9	2.5V ± 0.2
STBY 3.3V (BY A1 CONNECTOR) A-Board TPA16	3.3V ± 0.2V

D-BOARD	VOLTAGE
+B2 (BY D2 CONNECTOR) D-Board TPD144	144.0 ± 1.5V
25V (BY D40 CONNECTOR) D-Board TPD250	27.5 ± 2.0V
15V (BY D4 CONNECTOR) D-Board TPD150	15.7 ± 1.5V
-15V (BY RL451) D-Board TPD151	-16.0V ± 1.5V
SOUND+ (BY D4 CONNECTOR) D-Board TPD160	16.5V ± 1.0V
SOUND- (BY D4) D-Board TPD161	-16.5V ± 1.0V
220V (BY D2 CONNECTOR) D-Board TPD7	210V ± 5.0V
12V (BY IC433) D-Board TPA6	12V ± 0.5V

High voltage check

1. **Select an active TV channel and confirm that horizontal is in sync.**
2. **Adjust BRIGHTNESS and PICTURE using PICTURE icon menu so video just disappears.**
3. **Confirm B+ 144 ± 1.5V is within limit.**
4. **Using a high voltage meter confirm that the high voltage is 33.0kV ± 1.0kV**

13. Purity and convergence procedure

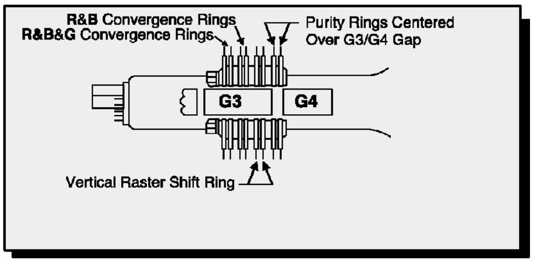
Adjustment is necessary only if the CRT or the deflection yoke is replaced or if the setting was disturbed. The complete procedure consists of:

1. **Vertical raster shift adjustment.**
2. **Initial static convergence.**
3. **Setting the purity.**
4. **Final static convergence.**

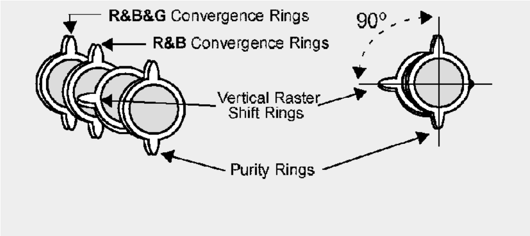
WHEN THE CRT OR THE YOKE IS REPLACED

Place the yoke on the CRT neck (do not tighten the clamp). Place the vertical raster shift tabs at 3 o'clock (90° from the purity and convergence tabs

Description of rings


R&B Convergence Rings
R&B&G Convergence Rings
Purity Rings Centered Over G3/G4 Gap
G3
G4
Vertical Raster Shift Ring

Initial position of rings


R&B&G Convergence Rings
R&B Convergence Rings
90°
Vertical Raster Shift Rings
Purity Rings

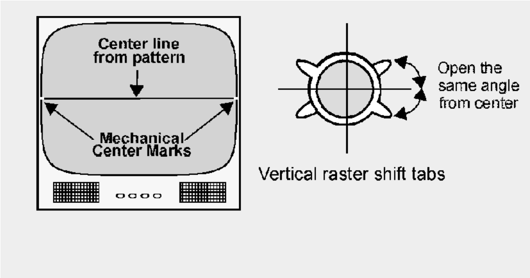
Turn the receiver ON. Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.
Fully degauss the receiver by using an external degaussing coil.
Slide the deflection yoke back and forth on the neck of the CRT until it produces a near white, uniform raster.

VERTICAL RASTER SHIFT ADJUSTMENT

Apply a green pattern with a horizontal line, adjust the Deflection Yoke so that has no tilt, then secure it.
Adjust center line of the pattern with the mechanical center of the CRT, this center is determined by two marks at the side edges of the screen. To adjust the line, once the vertical raster shift tabs are place at 3 o'clock to reduce itsmagnetic field effect open the tabs the same angle from the center, until the center line of the pattern becomes a straight line, centered with the marks of the CRT.

IMPORTANT NOTICE
Rings come along with deflection yoke in one piece.

Vertical raster shift adjustment


Center line from pattern
Mechanical Center Marks
Open the same angle from center
Vertical raster shift tabs

INITIAL CENTER STATIC CONVERGENCE

Connect a dot/cross hatch generator to the receiver and tune in a signal. Observe misconvergence at center of the screen only.
Adjust the R&B pole magnets; by separating tabs and rotating to converge blue with red.
Adjust the R&B and R&B&G pole magnets: by separating tabs and rotating to converge blue and red (magenta) with green.

NOTE
Precise convergence at this point is not important.

PURITY ADJUSTMENT

When the receiver is in the serviceman mode for making electronic adjustments, press the RECALL button on the remote control to enter purity check. (See the service adjustments electronic controls procedure).

Operate the receiver for 60 minutes using the first purity check field (white screen) to stabilize the CRT.

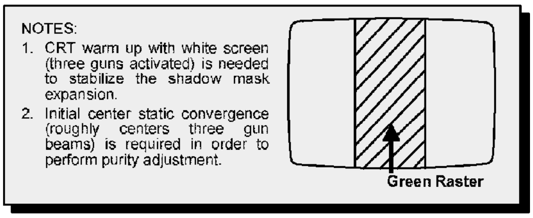
Fully degauss the receiver by using an external degaussing coil

Press the RECALL button on the remote control again until the purity check (green screen) appears.

Loosen the deflection yoke clamp screw and move the deflection yoke back as close to the purity magnet as possible.

Adjust the purity rings to set the vertical green raster precisely at the center of the screen

Green raster adjustment



NOTES:

1. CRT warm up with white screen (three guns activated) is needed to stabilize the shadow mask expansion.
2. Initial center static convergence (roughly centers three gun beams) is required in order to perform purity adjustment.

Slowly move the deflection yoke forward until the best overall green screen is displayed.

Tighten the deflection yoke clamp screw.

Press the RECALL button on the remote control again until the purity check blue and red screens appear and observe that good purity is obtained on each respective field.

Press the RECALL button on the remote control again until purity check (white screen) appears.

Observe the screen for uniform white. If purity has not been achieved, repeat the above procedure.

FINAL CONVERGENCE PROCEDURE

NOTE

Vertical size and focus adjustments must be completed prior to performing the convergence adjustment. Connect a dot pattern generator to the receiver. The brightness level should not be higher than necessary to obtain a clear pattern.

Converge the red and the blue dots at the center of the screen by rotating the R&B pole static convergence magnets.

Align the converged red/blue dots with the green dots at the center of the screen by rotating the R &B&G pole static convergence magnets. Melt wax with soldering iron to reseal the magnets.

Slightly tilt vertically and horizontally (do not rotate) the deflection yoke to obtain a good overall convergence.

If convergence is not reached at the edges, insert permalloy in the DY corners to achieve proper convergence. Recheck for purity and readjust if necessary.

After vertical adjustment of the yoke, insert wedge at 11 o’clock position, then make the horizontal tilt adjustment.

Secure the deflection yoke by inserting four side wedges.
Apply adhesive between tab (thin portion) of wedge and CRT and place tape over the tab to secure to the CRT.

13.1. DYNAMIC CONVERGENCE ADJUSTMENT

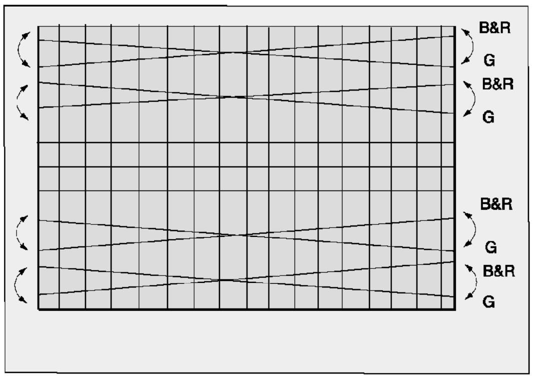
Use this for a precisely overall convergence adjust at the edges.

DY(YHC, YV, XV) ADJUSTMENT

YV ADJUSTMENT / (VR1 FOR HORIZONTAL DYNAMIC CONVERGENCE)

1. **Apply a crosshatch pattern.**
2. **Adjust contrast and brightness customer controls to obtain a correct picture.**
3. **With a driver adjust VR1 (located in deflection yoke board to obtain a proper corvergence at top and bottom of the screen**

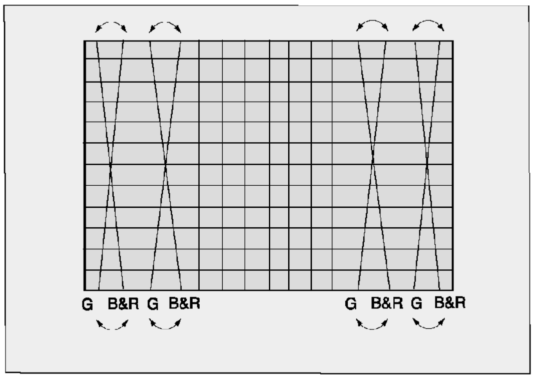
VR1 adjustment (YV)



YH Adjustment / (VR2 for vertical dynamic convergence)

1. **Apply a crosshatch pattern.**
2. **Adjust contrast and brightness customer controls to obtain a correct picture.**
3. **With a driver Adjust VR2 (located in deflection yoke board to obtain a proper corvergence at left and right side of the screen.**

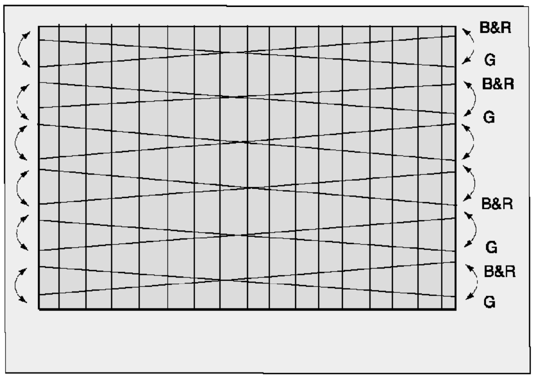
VR2 adjustment (YH)



XV Adjustment (precise adjustment)

1. **Apply a crosshatch pattern.**
2. **Adjust contrast and brightness customer controls to obtain a correct picture.**
3. **With a driver adjust the coil located in deflection yoke board to obtain a proper convergence horizontally.**

Xv adjustment



NOTE

Apply a red pattern and confirm purity, if purity is poor, repeat purity adjustments.

13.2. Permalloy convergence corrector strip (Part No. 0FMK014ZZ)

This strip is used in some sets to match the yoke and CRT for optimum convergence. If the yoke or CRT is replaced, the strip may not be required.

First converge the set without the strip and observe the corners.

First converge the set without the strip and observe the corners.

If correction is needed:

1. **Place strip between CRT and yoke, in quadrant needing correction. Slowly move it around for desired results.**
2. **Press adhesive tightly to the CRT and secure with tape.**

13.3. DAF adjustment / (Dynamic focus adjustment)

The purpose of this adjustment is to move the focus in the picture, so the focus is in balance in the whole picture (same level). Perform this adjustment as a visual adjustment, centering both waveforms, repeat adjustment until best adjustment isobtained.

PREPARATION

1. **Picture settings normalized.**
2. **Picture mode set to VIVID.**

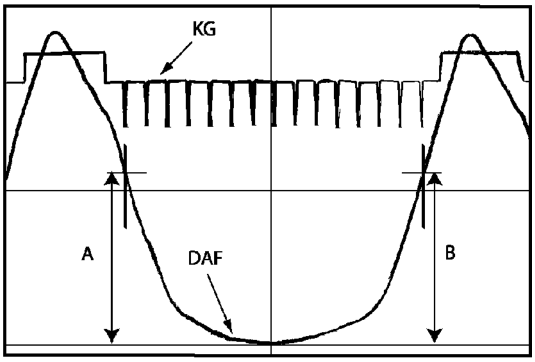
PREPARATION

1. **Apply a crosshatch pattern.**
2. **Connect channel one of the oscilloscope with 100x1 probe to DAF OUT on J172 (D-Board).**
3. **Connect channel two of the oscilloscope with 10x1 probe to KG (L-Board).**
4. **If the the points A and B are different adjust, in service mode, adjust (HDAFS) DATA so that become the same position.**
5. **Apply a 1080i crosshatch pattern and repeat from step 1 to step 4.**

NOTE

Both waveforms should be centered. Upper waveform could be different depending on the pattern applied

DAF adjustment



Other method (DAF adjustment)

PREPARATION

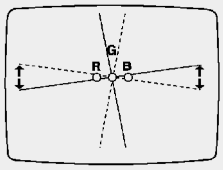
1. **Picture settings normalized.**
2. **Picture mode set to VIVID.**

PROCEDURE

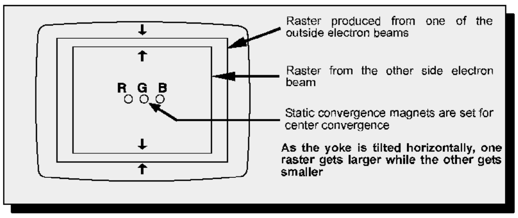
1. **Apply a crosshatch pattern.**
2. **Put a mark in the focus control (on fly-back), so the control can be put back in the original position.**
3. **Turn the focus control (fly-back) fully, so the image is out focus.**
4. **Then in service mode adjust (HDAFS) DATA, so the focus is moving from side to side in the picture.**
5. **Adjust (HDAFS) DATA so the picture looks in balance in left and right.**
6. **Turn focus (fly-back) control back to its original position.**
7. **Apply a 1080i crosshatch pattern and repeat from step 1 to step 6.**

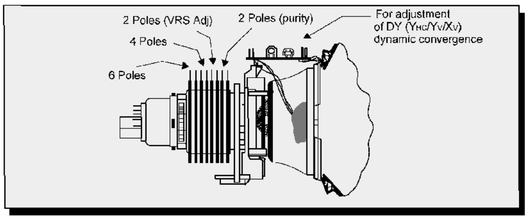
NOTE

Repeat adjustment until best adjustment is obtained. For best adjustment, use oscilloscope as described in previous adjustment method.



As the yoke is tilted vertically, the rasters produced by the outside guns rotate in opposite directions.


Raster produced from one of the outside electron beams
Raster from the other side electron beam
R G B
Static convergence magnets are set for center convergence
As the yoke is tilted horizontally, one raster gets larger while the other gets smaller


2 Poles (VRS Adj)
2 Poles (purity)
For adjustment of DY (YHC/YV/XV) dynamic convergence
4 Poles
6 Poles

14. Service mode (electronic adjustments)

This receiver has electronic technology using the IC bus concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed byusing “on screen display menu”. (The service adjustment mode).

NOTE

It is suggested that the technician reads all the way through and understand the following procedure for entering/exiting the service adjustment mode; then proceed with the instructions working with the receiver. When becoming familiarwith the procedure, the flow chart for service mode may be used as a quick guide.

Quick entry to service mode

When minor adjustments need to be done to the electronic controls, the method of entering the service mode without removal of the cabinet back is as follows using the remote control:

1. **Select SET-UP icon and select CABLE mode.**
2. **Select TIMER icon and set SLEEP time for 30 Min.**
3. **Exit menus.**
4. **Tune to the channel 124.**
5. **Adjust VOLUME to minimum (0).**
6. **Press VOL → (decrease) on receiver. Red “CHK” appears in upper corner.**

NOTE

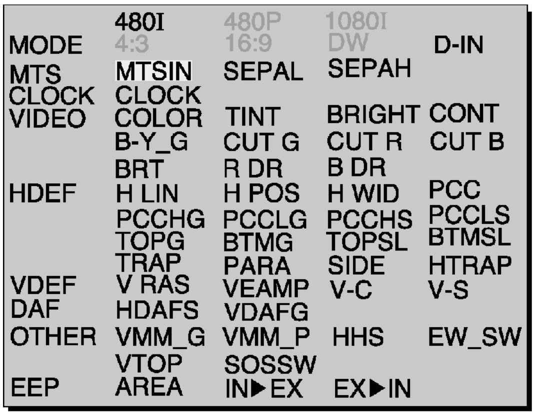
After receiver is set into service mode, set TIMER back to NO.

To toggle between aging and service modes:

While the “CHK” is displayed on the left top corner of the CRT, pressing “ACTION” and “VOL” UP on the TV simultaneously will toggle between the modes. Red “CHK” for serviceand yellow

"CHK" for aging.

7. Press POWER on the remote control to display the service adjustment modes menu, select adjustment by pressing the volume right/left buttons and channel up/down buttons on the remote and ACTION to enter the adjustment.



MODE	480I 4:3	480P 16:9	1080I DW	D-IN
MTS	MTSIN	SEPAL	SEPAH	
CLOCK	CLOCK			
VIDEO	COLOR	TINT	BRIGHT	CONT
	B-Y_G	CUT G	CUT R	CUT B
	BRT	R DR	B DR	
HDEF	H LIN	H POS	H WID	PCC
	PCCHG	PCCLG	PCCHS	PCCLS
	TOPG	BTMG	TOPSL	BTMSL
	TRAP	PARA	SIDE	HTRAP
VDEF	V RAS	VEAMP	V-C	V-S
DAF	HDAFS	VDAFG		
OTHER	VMM_G	VMM_P	HHS	EW_SW
	VTOP	SOSSW		
EEP	AREA	IN▶EX	EX▶IN	

NOTE

Some adjustments are available only in some modes (480i, 480p, 1080i); it is needed to apply the format. A 1080i, 480p, 480i pattern can be obtained from Panasonic's TU-DST51 set-top box DTV decoder.

Exiting the service mode:

This TV goes out from service mode when it is unplugged or turned OFF. To exit the service mode, turn the TV OFF or unplug the TV from A.C.

Other method

Press ACTION and POWER on the receiver simultaneously for at least 2 seconds.

The receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.

Any programmed channels, channels caption data and some others user defined settings will be erased when exited by pressing ACTION and POWER on receiver.

IMPORTANT NOTE

Always check that the TV exits the service mode.

To confirm colors

When in service mode (red "CHK" is displayed) press RECALL on the remote control to enter the purity field check mode

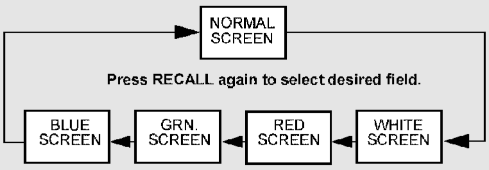


Figure 1. Purity check field mode.

Entering service mode (open-back method)

While the receiver is connected and operating in normal mode, momentarily short test point / FA1 (A15 pin 2) to cold ground (A-Board).

The receiver enters the aging mode.

Yellow letters "CHK" appear in the upper left corner of the screen. / (The volume right/left and channel up/down will adjust rapidly).

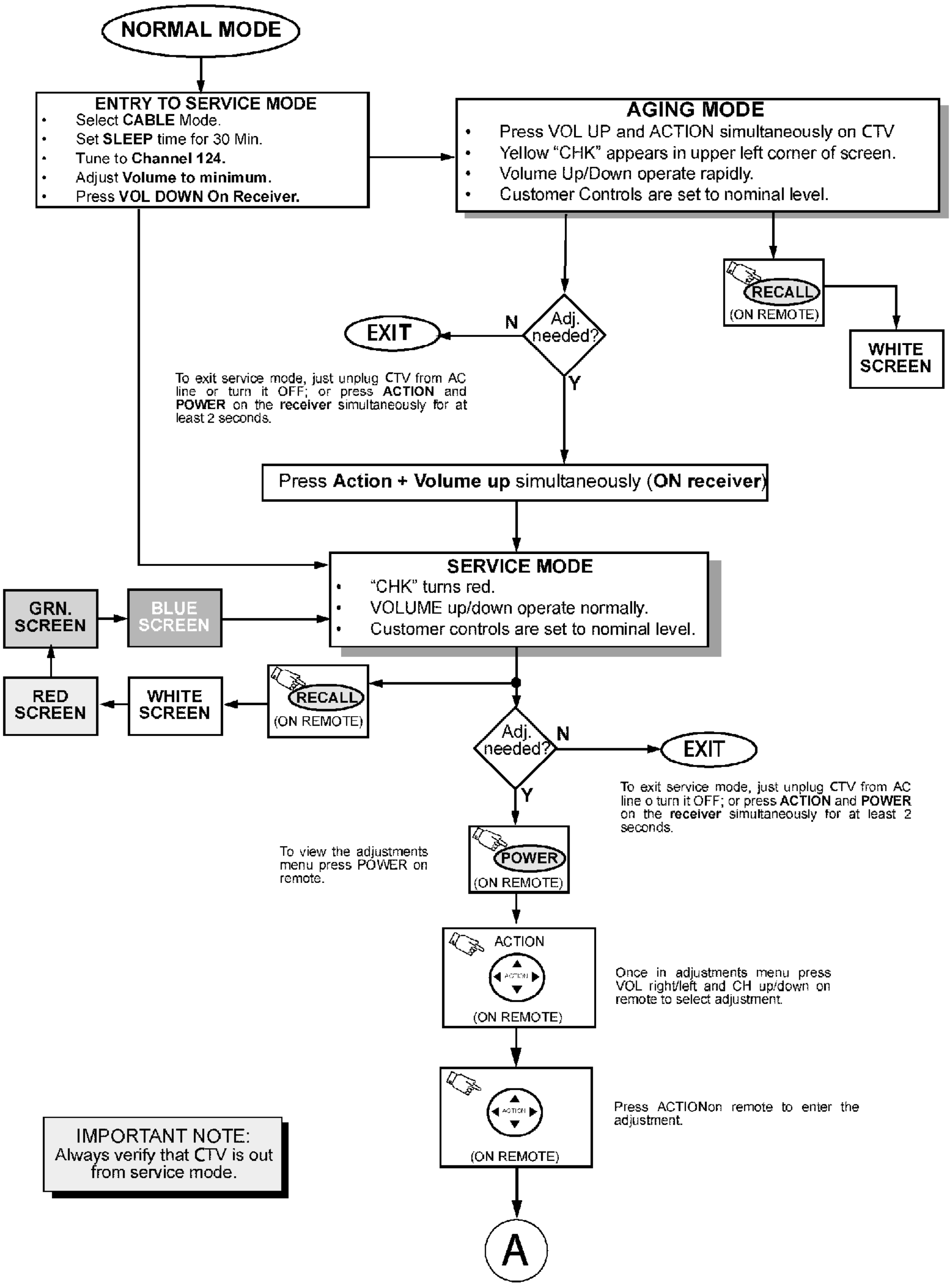
14.1. Service adjustment default values for service items

REGISTER	DESCRIPTION	FORMAT			
		NTSC	480p (16:9)	1080i (16:9)	1080i
MTSIN	INPUT LEVEL	1A			
SEPAL	LOW LEVEL SEPARATION	6			
SEPAH	HIGH LEVEL SEPARATION	20			
CLOCK	CLOCK	128			
COLOR	COLOR	2F		17	
TINT	TINT	76		81	
BRIGH	SUB-BRIGHTNESS	3B		42	
CONT	SUB-CONTRAST	23		65	
B-Y_G	MAGENTA TINT ADJ	2E		3E	
CUT G	GREEN CUT-OFF	01 65			
CUT R	RED CUT-OFF	01 85			
CUT B	BLUE CUT-OFF	01 A6			
BRT	BGRIGHT				
R DR	RED DRIVE	A0			
B DR	BLUE DRIVE	A0			
HLIN	HORIZONTAL LINEARITY	79		7F	
HPOS	HORIZONTAL POSITIONING	01 7A		01 82	
HWID	HORIZONTAL WIDTH	54		2F	
PCC	PINCUSHION CORRECTION	50	2A	31	3E
PCCHG	PINCUSHION HIGH	6	0A	9	7
PCCLG	PINCUSHION LOW	2	7	5	9
PCCHS	PINCUSHION HIGH	4	3	3	3
PCCLS	PINCUSHION LOW	3	3	3	3
TOPG	TOP CORNER PINCUSHION	5B	55	4C	5E
BTMG	BOTTOM CORNER PINCUSHION	45	32	49	4A

REGISTER	DESCRIPTION	FORMAT			
		NTSC	480p (16:9)	1080i (16:9)	1080i
TOPSL	TOP CORNER PINCUSHION SLICE LEVEL	2	8	6	7
BTMSL	BOTTOM CORNER PINCUSHION SLICE LEVEL	2	8	5	7
TRAP	TRAPEZOID	83	7E	7F	7D
PARA	PARALLELOGRAM	3	4	4	8
SIDE	E-W PINCUSHION ADJUSTMENT	4	6	7	8
HTRAP	HORIZONTAL TRAPEZOID	1A	1A	1A	14
VRAS	VERTICAL POSITION	8C	71	7B	79
VEAMP	VERTICAL SIZE	A8	E2	99	9A
V-C	VERTICAL LINEARITY	21	26	25	24
V-S	VERTICAL S CORRECTION	30	25	17	33
HDAFS	HORIZONTAL DAF PHASE	59		01 C5	A
VDAFG	VERTICAL DAF GAIN	A0	63	60	0
VMM_G	----------------	F0		F0	
VMM_P	----------------	F3		F3	
HHS	----------------	CB			
EW_SW	----------------	0	0	0	
VTOP	----------------	9C	7E	79	9
SOSSW	----------------	1		1	

NOTE:
The above table shows the default values for the service items, this values can change depending on the serviced TV.

14.2. Instructional flow chart for service mode


NORMAL MODE
ENTRY TO SERVICE MODE
• Select CABLE Mode.
• Set SLEEP time for 30 Min.
• Tune to Channel 124.
• Adjust Volume to minimum.
• Press VOL DOWN On Receiver.
AGING MODE
• Press VOL UP and ACTION simultaneously on CTV
• Yellow "CHK" appears in upper left corner of screen.
• Volume Up/Down operate rapidly.
• Customer Controls are set to nominal level.
RECALL
(ON REMOTE)
WHITE SCREEN
Adj. needed?
N
EXIT
Y
Press Action + Volume up simultaneously (ON receiver)
SERVICE MODE
• "CHK" turns red.
• VOLUME up/down operate normally.
• Customer controls are set to nominal level.
GRN. SCREEN
BLUE SCREEN
RED SCREEN
WHITE SCREEN
RECALL
(ON REMOTE)
Adj. needed?
N
EXIT
Y
POWER
(ON REMOTE)
ACTION
(ON REMOTE)
(ON REMOTE)
A

To exit service mode, just unplug CTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

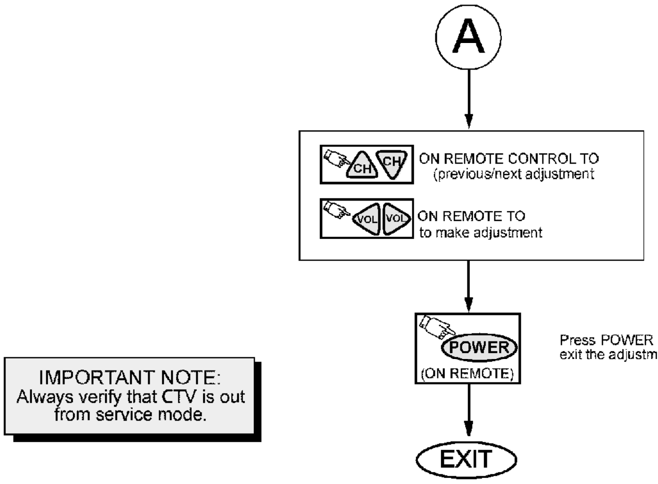
To exit service mode, just unplug CTV from AC line o turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

To view the adjustments menu press POWER on remote.

Once in adjustments menu press VOL right/left and CH up/down on remote to select adjustment.

Press ACTIONon remote to enter the adjustment.

IMPORTANT NOTE:
Always verify that CTV is out from service mode.


A
CH CH ON REMOTE CONTROL TO (previous/next adjustment
VOL VOL ON REMOTE TO to make adjustment
POWER (ON REMOTE)
EXIT
IMPORTANT NOTE: Always verify that CTV is out from service mode.

Press POWER or ACTION on remote to exit the adjustment.

To exit service mode, just unplug CTV from AC line or turn it OFF; or press **ACTION** and **POWER** on the **receiver** simultaneously for at least 2 seconds.

15. Service adjustments (electronic controls)

NOTE

Please correlate with available pattern on all adjustments

15.1. (NTSC) Sub-Brightness / Service DAC adjustment (BRIGHT)

Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

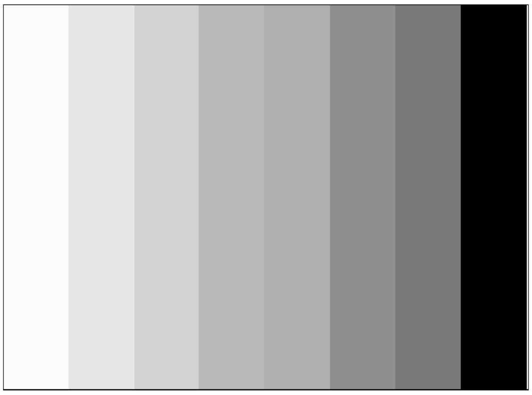
Preparation

1. **Normalize picture settings.**
2. **Picture mode set to VIVID.**
3. **Switch NATURAL COLOR to OFF.**
4. **Switch COLOR TEMPERATURE to COOL.**

Procedure

1. **Apply a colorbar with no color pattern.**
2. **In the service mode for making electronic adjustments, select the DAC adjustment “BRIGHT” and adjust data so that 7.5IRE part is the same light output as the 3IRE part**

Bars pattern



15.2. (1080i) Sub-Brightness / Service DAC adjustment (BRIGHT)

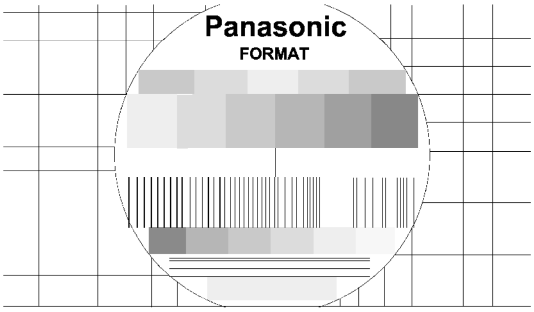
Adjustment of this control is important for setting proper operation of customer brightness and picture controls. Do not adjust the SCREEN VR after the sub-brightness is set.

Preparation

1. **Normalize picture settings.**
2. **Picture mode set to VIVID.**
3. **Switch NATURAL COLOR to OFF.**
4. **Switch COLOR TEMPERATURE to COOL.**

Procedure

1. **Apply a colorbar with no color pattern.**
2. **In the service mode for making electronic adjustments, select the DAC adjustment “BRIGHT” and adjust data so that 7.5IRE part is the same light output as the 3IRE part**



15.3. (NTSC) Sub-Contrast / Service DAC adjustment (CUT-G, CONT)

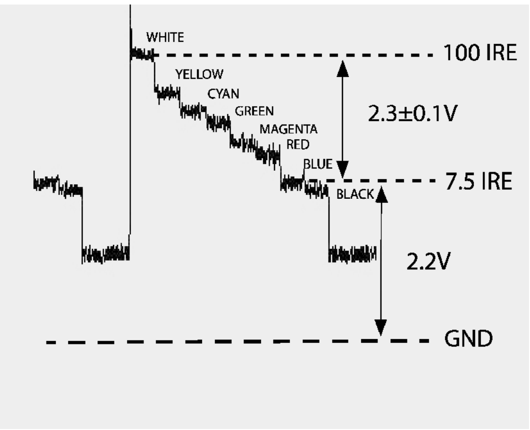
This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

Preparation

1. Apply a colorbar pattern.
2. Set the PICTURE settings to normal.
3. Set color to minimum (no color on picture).
4. Set PICTURE mode to VIVID
5. Connect the oscilloscope to TP47G.

Procedure

1. In the service mode, select DAC for brightness adjustment "BRIGH" and set data to "1 D0".
2. In service mode, select DAC for green cutoff adjustment "CUT-G", and adjust data to obtain 2.2 V between 7.5IRE and GND level at TP47G. (See waveform detail)
3. In service mode, select DAC for contrast adjustment "CONT", and adjust data to obtain 2.3±0.1V between 7.5IRE and 100IRE level at TP47G. (See waveform detail)



15.4. (1080i) Sub-Contrast / Service DAC adjustment (CUT-G, CONT)

This adjustment is factory set. Do not adjust unless repairs are made to associated circuit, the CRT Board or when the CRT is replaced.

PREPARATION

1. Apply a 1080i pattern (colorbar no color).
2. Set the PICTURE settings to normal.

3. Set PICTURE mode to VIVID
4. Connect the oscilloscope to TP47G.

PROCEDURE

1. In the service mode, select DAC for brightness adjustment "BRIGH" to obtain 2.0V between 0 IRE and GND level at TP47G
2. In service mode, select DAC "CONT", and adjust data to obtain 2.5 ±0.1V between 0 IRE and 100 IRE level at TP47G

15.5. (NTSC) Color output adjustment / Service DAC adjustment (COLOR, TINT)

NOTE

if a rainbow pattern generator is available perform the following procedure; the next section describes the procedure with no rainbow pattern.

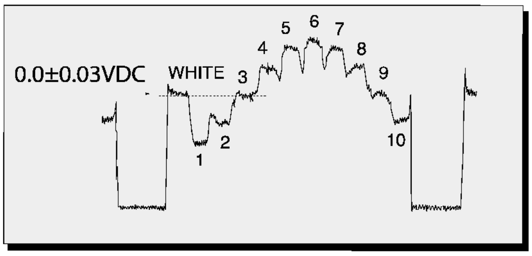
Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

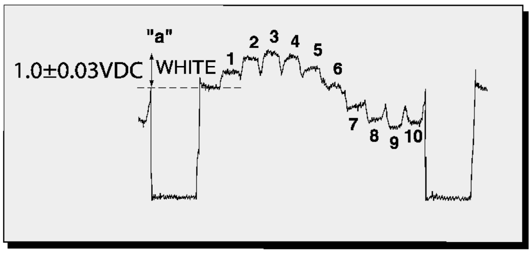
PROCEDURE

1. Apply a rainbow color bar pattern.
2. In service mode adjust "R DR" and "B DR" data to "80".
3. Connect the oscilloscope to TP47B.
4. In service mode adjust "TINT" data so that the peak white is located at same level as peak "3", within 0±0.03V. (See waveform detail)



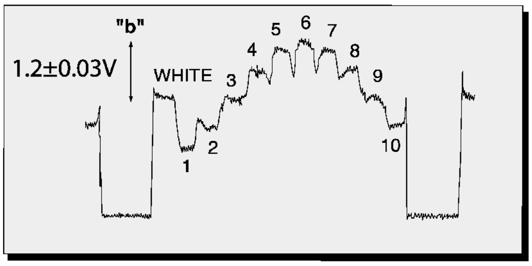
5. Connect the oscilloscope to TP47R.

6. In service mode adjust “COLOR” data so that the amplitude “a” is 1.0±0.03V.



7. Connect the oscilloscope to TP47B.

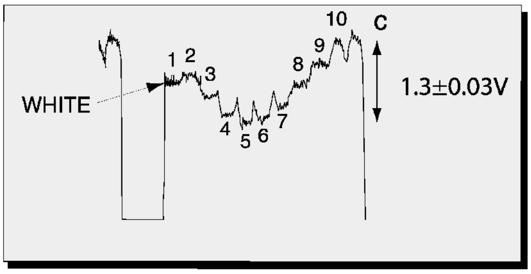
8. In service mode adjust “B-Y G” data so that the amplitude “b” is 1.2±0.03V (between 3rd and 6th peaks).



9. With oscilloscope still connected to TP47B, adjust “TINT” data so that the peak “9” is located at same level as peak “3”, within 0± 0.03V, then increase “TINT” databy 9 steps.

10. Connect oscilloscope to TP47G.

11. In service mode adjust “COLOR” data so that the amplitude “C” is 0.92~0.02V.



12. Apply a studio color bar pattern and confirm that saturation and phase are normal (normal image).

15.6. (NTSC) Color output adjustment / Service DAC adjustment / (COLOR, TINT, B-Y_G)

NOTE

Color and tint adjustment sets the reference settings for the user controls; It is important to read the procedures.

(NO RAINBOW PATTERN)

Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

1. Normalize the picture settings.
2. Set picture mode to VIVID
3. Switch NATURAL COLOR to OFF.

PROCEDURE

1. Apply a color bar pattern.
2. In service mode adjust “R DR” and “B DR” data to “80”.
3. In service mode adjust “TINT” data so that the color does not become greenish or redish.
4. In service mode adjust “COLOR” data so that the color level is not too high (saturated) or too low (tending to black and white).
5. In service mode adjust “B-Y G” data so that blue and green seem natural.
6. confirm that saturation and picture are normal (normal image).
7. If image is not satisfactory, repeat adjustment until the images is normal and natural

NOTE

The image can be compared against other set to see the image quality.

15.7. (1080i) Color output adjustment / Service DAC adjustment (COLOR, TINT

Make sure that sub-contrast adjustment was finished prior to perform this adjustment

PREPARATION

1. **Normalize the picture settings.**
2. **Set picture mode to VIVID**
3. **Switch NATURAL COLOR to OFF.**

PROCEDURE

1. **Apply a 1080i pattern or signal**
2. **In service mode adjust “R DR” and “B DR” data to “80”.**
3. **In service mode adjust “TINT” data so that the color does not become greenish or redish.**
4. **In service mode adjust “COLOR” data so that the color level is not too high (saturated) or too low (tending to black and white).**
5. **In service mode adjust “B-Y G” data so that blue and green seem natural.**
6. **confirm that saturation and picture are normal (normal image).**
7. **If image is not satisfactory, repeat adjustment until the image is normal and natural.**

NOTE
The image can be compared against other set to see the image quality.

15.8. Color temperature adjustment / (B / W Tracking) / Service DAC Adjust. / (CUT R) (CUT G) (CUT B) (R DR) (B DR)

Minor Touch-Up Method

OBSERVE low and high brightness areas of a B/W picture for proper tracking. Adjust only as required for “good gray scale and warm highlights”.

1. LOW LIGHT areas - In service mode for making electronic adjustments, select CUT R, CUT G, CUT B and adjust the picture for gray.
2. HIGH LIGHT areas - In service mode for making electronic adjustments, select drive R DR, B DR and adjust the picture for warm whites.

Complete adjustment

PREPARATION

1. Turn the receiver “ON” and allow 30 minutes warm up at WHITE PATTERN.
2. Apply a color bar pattern (with no color).
3. Turn the SCREEN control (part of FBT T551) fully counterclockwise.
4. Preset the following service DACs for best results:

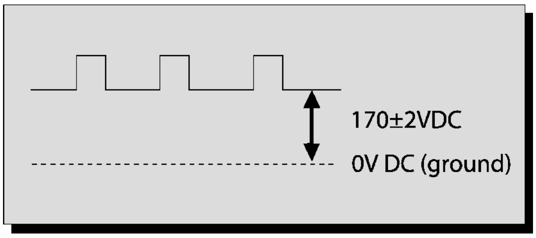
   - BRIGH______________________1 D0
   - CUT R_______________________0 00
   - CUT G_______________________1 80
   - CUT B_______________________0 00
   - R DR________________________80
   - B DR________________________80
   - PICTURE SETTINGS__________NORMALIZED
   - PICTURE MODE______________VIVID

PROCEDURE

1. Connect the oscilloscope to KG (CRT-Board).
2. In service mode for making electronic adjustment, select “BRIGH” DAC.
3. Press RECALL button on the remote control to collapse the raster. (service SW).
4. Connect oscilloscope to KG on L-Board and adjust service mode “CUT-G” DAC until 170±2V above DC ground is measured

5. Remove the probe from KG.
6. Turn screen clockwise slowly until color is slightly appeared.
7. Then adjust “CUT R” and “CUT B” until line becomes white.
8. Press RECALL button on the remote to restore the raster.
9. Adjust “R DR” and “B DR” so the white seems like white and black like black
10. Apply a normal signal and confirm that the image is normal and a good gray scale
11. If correction is needed perform minor touch-up method.

NOTE
This adjustment (NTSC) will adjust automatically 480p and 1080i formats, no need to adjust for these formats



15.9. Deflection adjustments

To reset deflection adjustments

To reset deflection adjustments to factory adjusted default, enter to service mode (with red CHK displayed), press POWER button on remote to display the service menu, then press and hold RECALL button for at least three seconds, a reset messagewill appear in the image.
Use this feature when deflection adjustment gets off adjustment to the point that it cannot be adjusted back easily.

NOTE
Deflection adjustment for 480i/480p, 480i/480p 16:9 and 480i/480p split, 1080i letter and split mode are provided differently.

15.9.1. (480i / 480p) / H-Center adjustment

PREPARATION

1. Apply a crosshatch pattern.

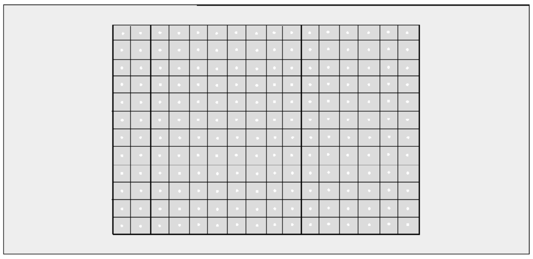
2. Normalize the picture settings.

3. Set picture mode to VIVID

PROCEDURE

1. If horizontal linearity is poor, in service mode, adjust data "H LIN"

H-Adjustment



2. Apply a pattern to center the picture.

3. If the horizontal center is not aligned, in service mode adjust "H POS" DATA to adjust the horizontal center of the monoscope pattern to the CRT center.

15.9.2. (480i / 480p) / Vertical linearity(V-C), V-Size and V-Position adjustment

PREPARATION

1. Apply a crosshatch pattern

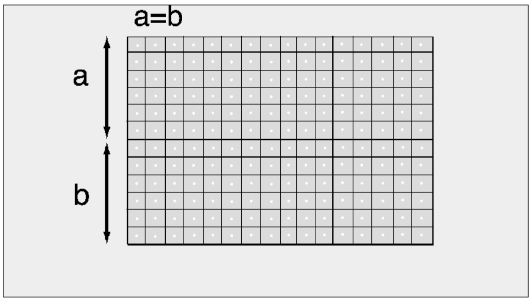
2. Normalize the picture settings.

3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment / "V-RAS" and adjust crosshatch pattern to center vertical position to the CRT center.

2. Adjust linearity data "V-C" so that interval of "a" is same as "b" (a= b).



3. If the v-position is not at the CRT center, adjust / V position “V RAS” DATA again.
4. Adjust H-TRAPEZOID data “HTRAP” so that the upper and lower lines becomes horizontal.

15.9.3. (480i / 480p) / V-S, V-Size adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

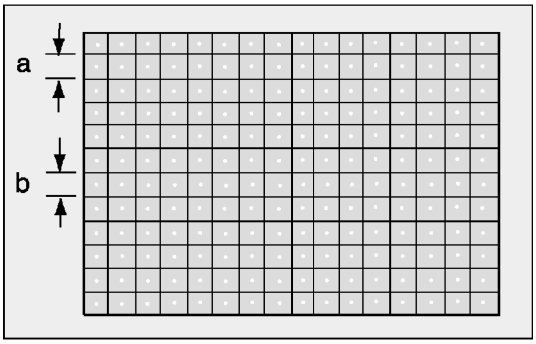
1. Enter to service mode
2. Check a and b sizes, If b-a < -1.5mm (in top & bottom extending case)

   - Increase “V-S” DATA by one step
   - Adjust “VEAMP” so that V-SIZE is regular size again.

   NOTE
   Repeat “a” and “b” until b-a ± 1.5mm

3. Confirm to make outermost circle of monoscope pattern a correct circle

V-Adjustment



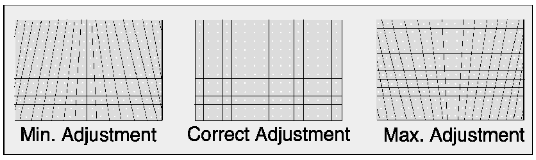
15.9.4. (480i / 480p) / Trapezoid adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “TRAP” and adjust DATA so that lines at right and left are vertical like a solid line



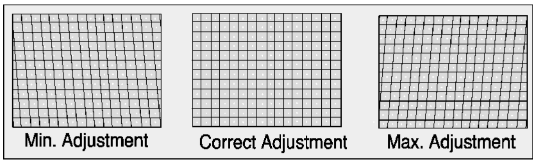
15.9.5. (480i / 480p) / Parallelogram adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “PARA” and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

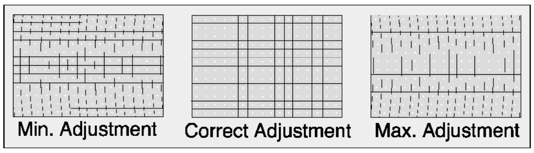
15.9.6. (480i / 480p) / E-W PCC balance adjustment

PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “SIDE” and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

15.9.7. (480i / 480p) / PCC adjustment

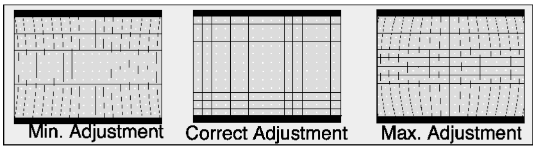
PREPARATION

1. Apply a crosshatch pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance

PCC adjustments


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If side and lower side is imbalanced, adjust “PCCHG” and “PCCLG” so that “PCC” make good balance.

15.9.8. (480i / 480p) / Corner PCC adjustment

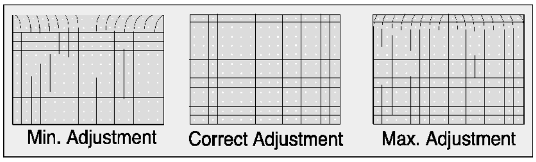
PREPARATION

1. **Apply a crosshatch pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

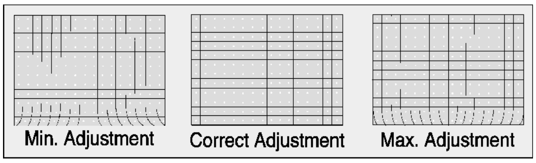
1. **To adjust upper and lower linearity.**
2. **Adjust “TOPG” to straighten upper lines**

Top adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. **Adjust “BTMG” to straighten lower lines**

Bottom adjustment


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust “TOPSL” and “BTMSL” of slice level.

15.9.9. (480i / 480p) / H-Size adjustment

PREPARATION

1. **Use a pattern that permits centering the image**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Adjust "H WID" DATA so that left width and right become in good balance (not too wide or narrow).**

15.9.10. (480i / 480p 16:9 and 480i / 480p split) Vertical linearity(V-C) and V-Position adjustment

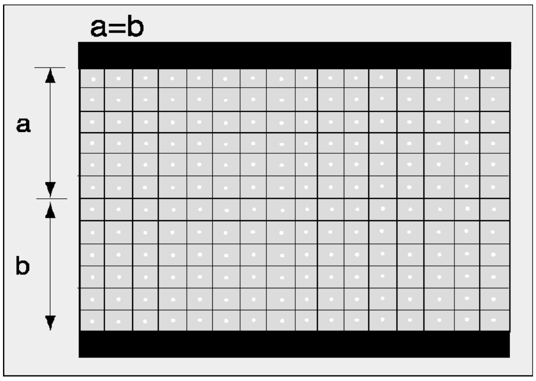
PREPARATION

1. **Apply a 480p pattern**
2. **Set mode to 16x9 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select DAC adjustment / "V-RAS" and adjust crosshatch pattern to center vertical position to the CRT center.**
2. **Adjust linearity data "V-C" so that interval of "a" is same as "b" (a= b).**

Linearity adjustment



15.9.11. (480i / 480p 16:9 and 480i / 480p split) / V-S, V-Size adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

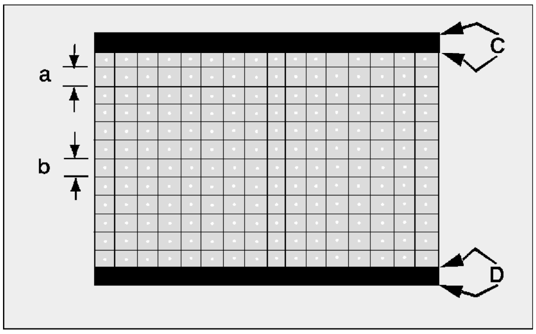
PROCEDURE

1. Enter to service mode
2. Adjust “VAMP” so that width C and D becomes 60mm
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)
    - Increase “V-S” DATA by one step
    - Adjust “VEAMP” so that width C and D becomes 60mm for 32” and 70mm for 36”.

NOTE

Repeat until b-a ± 1.5mm

V-Adjustment



15.9.12. (480i / 480p 16:9 and 480i / 480p split) / H-Trapezoid adjustment

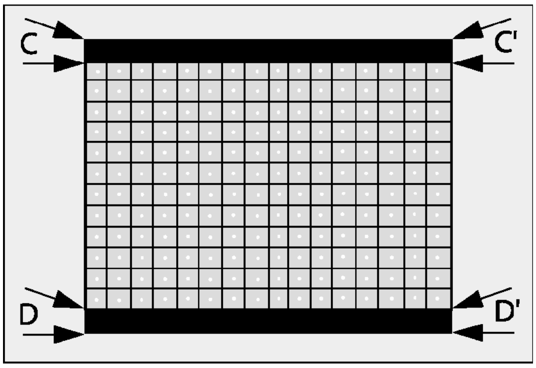
PREPARATION

1. Apply a 480p pattern

2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “HTRAP” and adjust DATA so that upper and lower edges become horizontal (c=c’ and d=d’)



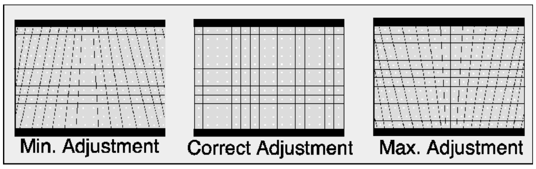
15.9.13. (480i / 480p 16:9 and 480i / 480p split) / Trapezoid adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “TRAP” and adjust DATA so that lines at right and left are vertical like a solid line



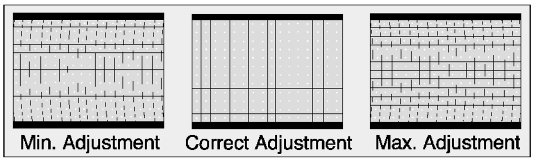
15.9.14. (480i / 480p 16:9 and 480i / 480p split) / E-W PCC adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select “SIDE” and adjust so that lines at right and left are vertical like solid line.


Min. Adjustment
Correct Adjustment
Max. Adjustment

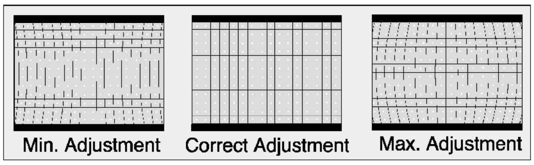
15.9.15. (480i / 480p 16:9 and 480i / 480p split) / PCC adjustment

PREPARATION

1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If side and lower side is imbalanced, adjust “PCCHG” and “PCCLG” so that “PCC” make good balance.

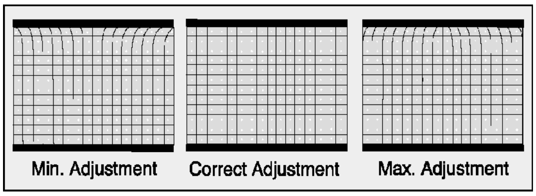
15.9.16. (480i / 480p 16:9 and 480i / 480p split) / Corner PCC adjustment

PREPARATION

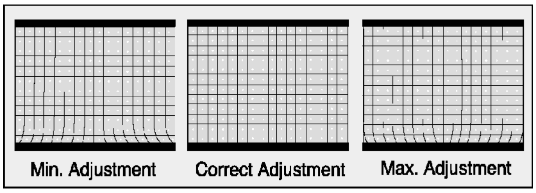
1. Apply a 480p pattern
2. Set mode to 16x9 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. To adjust upper and lower linearity.
2. Adjust "TOPG" to straighten upper lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. Adjust "BTMG" to straighten lower lines


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust "TOPSL" and "BTMSL" of slice level.

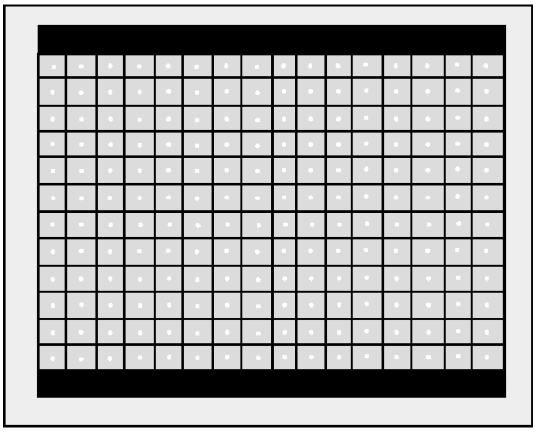
15.9.17. 1080i letter and split) / H-Center adjustment

PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. If horizontal linearity is poor, in service mode, adjust data “H LIN”



2. Apply a pattern to center the picture.
3. If the horizontal center is not aligned, in service mode adjust “H POS” DATA to adjust the horizontal center of the monoscope pattern to the CRT center.

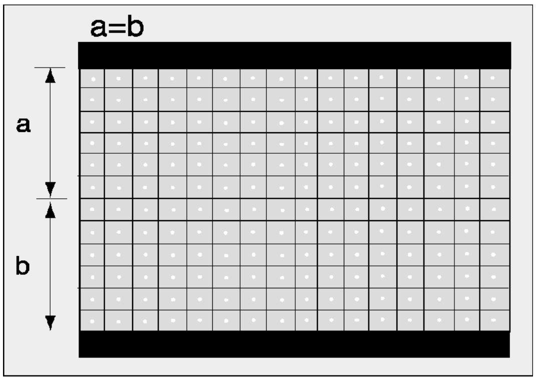
15.9.18. (1080i letter and split) / Vertical linearity(V-C) and V-Position adjustment

PREPARATION

1. Apply a 1080i pattern.
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment / “V-RAS” and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data “V-C” so that interval of “a” is same as “b” (a= b).



3. If the v-position is not at the CRT center, adjust again.

15.9.19. (1080i letter and split) / V-S, V-Size adjustment

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Enter to service mode
2. Adjust “VAMP” so that width C and D becomes 60mm
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)

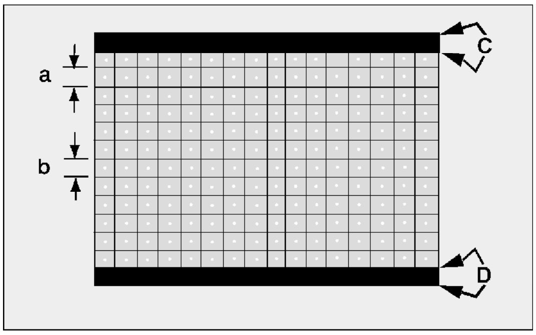
   - Increase “V-S” DATA by one step
   - Adjust “VEAMP” so that width C and D becomes 60mm.

   NOTE
   Repeat until b-a ± 1.5mm

4. Check a and b sizes, If b-a > -1.5mm (in top and bottom extending case)

   - Decrease “V-S” DATA by one step
   - Adjust “VEAMP” so that width C and D becomes 60mm.

NOTE
Repeat until b-a ± 1.5mm



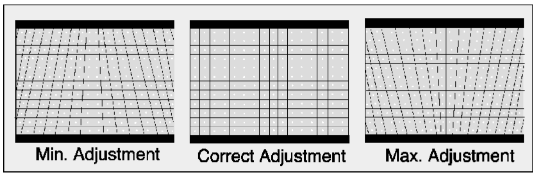
15.9.20. (1080i letter and split) / Trapezoid adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select "TRAP" and adjust DATA so that lines at right and left are vertical like a solid line**


Min. Adjustment
Correct Adjustment
Max. Adjustment

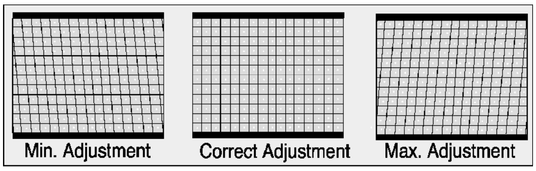
15.9.21. (1080i letter and split) / Parallelogram adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. Enter service mode, select “PARA” and adjust so that the lines at right and left are vertical like solid line.


Min. Adjustment Correct Adjustment Max. Adjustment

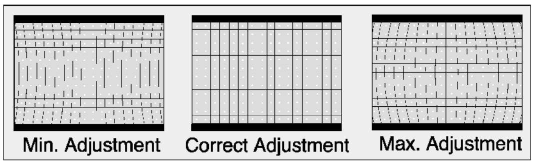
15.9.22. (1080i letter and split) / PCC adjustment

PREPARATION

1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. Confirm that trapezoid adjustment is done.
2. Adjust “PCC” DATA so that the 1st line and 3rd line make a good balance


Min. Adjustment Correct Adjustment Max. Adjustment

NOTE:
If upper and lower side is unbalaced, adjust “PCCHG” and “PCCLG” so that “PCC” make good balance.

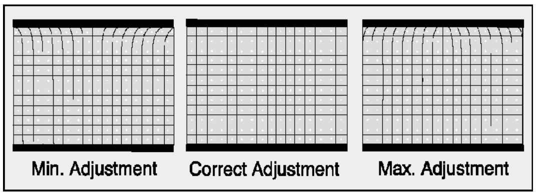
15.9.23. (1080i letter and split) / Corner PCC adjustment

PREPARATION

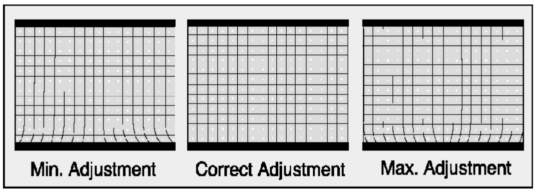
1. Apply a 1080i pattern
2. Normalize the picture settings.
3. Set picture mode to VIVID

PROCEDURE

1. **To adjust upper and lower linearity.**
2. **Adjust "TOPG" to straighten upper lines**


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. **Adjust "BTMG" to straighten lower lines**


Min. Adjustment
Correct Adjustment
Max. Adjustment

NOTE

If TOP-BOTTOM bending point is not so good, adjust "TOPSL" and "BTMSL" of slice level.

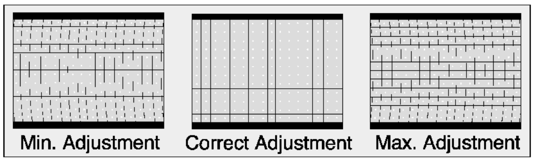
15.9.24. (1080i letter and split) / E-W PCC adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Normalize the picture settings.**
3. **Set picture mode to VIVID**

PROCEDURE

1. **Confirm that trapezoid adjustment is done.**
2. **Adjust "SIDE" DATA so that the lines at left and right become vertical**


Min. Adjustment
Correct Adjustment
Max. Adjustment

15.9.25. (1080i letter and split) / H-Width adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. Adjust “H WID” DATA so that left width and right become in good balance (not too wide or narrow).

15.9.26. (1080i full) / H-Size, V-SIZE adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Adjust “H WID” and “HPOS” DATA so that left width and right become in good balance (not too wide or narrow and centered).
2. Adjust “VEAMP” and “VRAS” DATA so that upper h and lower become in good balance (not too wide or narrow and centered)

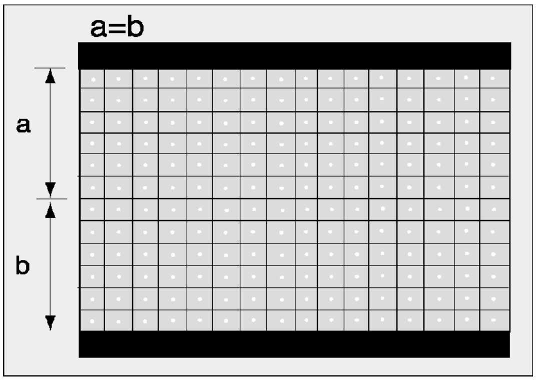
15.9.27. (1080i full) / Vertical linearity(V-C) and V-Position adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Enter service mode, select DAC adjustment / “VRAS” and adjust pattern to center vertical position to the CRT center.
2. Adjust linearity data “V-C” so that interval of “a” is same as “b” (a= b).



3. If the v-position is not at the CRT center, adjust again.

15.9.28. (1080i full) / V-S, V-Size adjustment

PREPARATION

1. Use a pattern that permits centering the image
2. Apply a 1080i pattern
3. Set mode to 4x3 in set-up menu
4. Normalize the picture settings.
5. Set picture mode to VIVID

PROCEDURE

1. Enter to service mode

2. Adjust “VAMP” to correct vertical size.
3. Check a and b sizes, If b-a < -1.5mm (in top and bottom extending case)

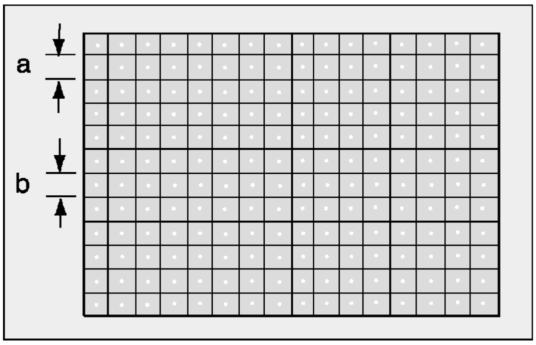
   - Increase “V-S” DATA by one step
   - Adjust “VEAMP” to correct vertical size.

   NOTE
   Repeat until b-a ± 1.5mm

4. Check a and b sizes, If b-a > -1.5mm (in top & bottom shortening case)

   - Decrease “V-S” by one step.
   - Adjust “VEAMP” to correct vertical size

   NOTE
   Repeat until b-a ± 1.5mm



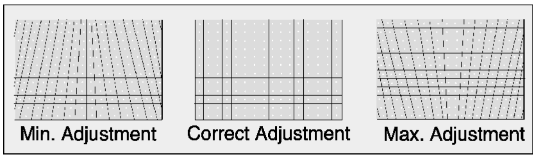
15.9.29. (1080i full) / Trapezoid adjustment

PREPARATION

1. Apply a 1080i pattern
2. Set mode to 4x3 in set-up menu
3. Normalize the picture settings.
4. Set picture mode to VIVID

PROCEDURE

1. **Enter service mode, select "TRAP" and adjust DATA so that lines at right and left are vertical like a solid line**


Min. Adjustment
Correct Adjustment
Max. Adjustment

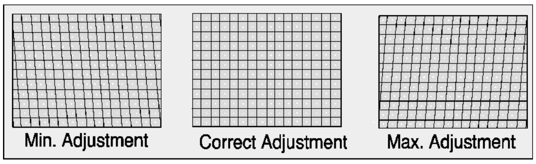
15.9.30. (1080i full) / Parallelogram adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Set mode to 4x3 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. **Enter service mode, select "PARA" and adjust so that the lines at right and left are vertical like solid line.**


Min. Adjustment
Correct Adjustment
Max. Adjustment

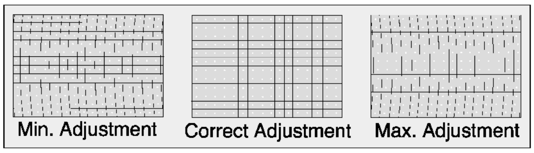
15.9.31. (1080i full) / E-W PCC adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Set mode to 4x3 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

PROCEDURE

1. **Confirm that trapezoid adjustment is done.**
2. **Adjust “SIDE” DATA so that the lines at left and right become vertical**


Min. Adjustment
Correct Adjustment
Max. Adjustment

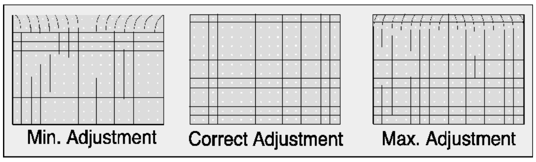
15.9.32. (1080i full) / Corner PCC adjustment

PREPARATION

1. **Apply a 1080i pattern**
2. **Set mode to 4x3 in set-up menu**
3. **Normalize the picture settings.**
4. **Set picture mode to VIVID**

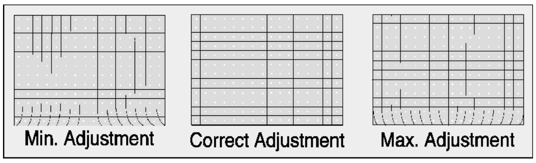
PROCEDURE

1. **To adjust upper and lower linearity.**
2. **Adjust “TOPG” to straighten upper lines**


Min. Adjustment
Correct Adjustment
Max. Adjustment

3. **Adjust “BTMG” to straighten lower lines**

NOTE
If TOP-BOTTOM bending point is not so good, adjust “TOPSL” and “BTMSL” of slice level.


Min. Adjustment
Correct Adjustment
Max. Adjustment

15.10. MTS circuit adjustmens

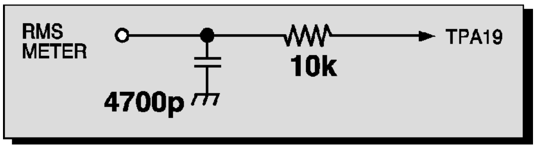
The MTS circuit adjustments require two steps:

1. Input level adjustment.
2. Stereo separation adjustment.

Input level adjustment / Service DAC adjustment (MTSIN)

PREPARATION

1. Connect an RMS meter with filter jig as shown in figure to TPA19 (L_OUT)



2. Connect an RF signal generator to the RF antenna input.

PROCEDURE

1. Apply the following signal from the RF signal generator:
   - Video: 100 IRE flat field, 30% modulation.
   - Audio: 300Hz, 100% modulation, monaural (70 ±5dB, 75 Ω OPEN, P/S 10dB). Make sure that the 75 μs pre-emphasis is OFF.
2. Adjust the MTS input level adjustment “MTSIN” data until the RMS voltage measured is 106 ± 6.0mVrms.

Stereo separation adjustment (SEPAH)

PREPARATION

1. Connect an R.F. signal generator to the RF antenna input.
2. Connect a scope to TPA20.

PROCEDURE

1. Select stereo mode in audio menu
2. Apply the following signal from the RF signal generator:

- **Video: 100 IRE flat field, 30% modulation.**
- **Audio: 300Hz, 30% modulation, stereo (left only) (70±5dB, 75 Ω OPEN, P/S 10dB).**

NOTE

After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.

3. **In service mode, adjust the MTS Low-Level separation adjustment "SEPAL" data until the amplitude displayed on the scope is minimum.**
4. **Apply the following signal from the RF signal generator:**

- **Video: 100 IRE flat field, 30% modulation**
- **Audio: 3KHz, 30% modulation, stereo (left only) (70 ±5dB, 75 Ω OPEN, P/S 10dB).**

NOTE

After setting 30% modulation with P.L. SW and N.R. SW OFF, turn P.L. SW and N.R. SW ON.

5. **Adjust the MTS High-level separation adjustment "SEPAH" until the amplitude displayed on the scope is minimum.**
6. **Repeat above steps 2 through 5 until the amplitude is at minimum for both signals.**

15.11. Clock adjustment (CLOCK)

PREPARATION

Connect the frequency counter from TP96 / (A23 pin 21) to cold ground

PROCEDURE

1. **Turn the receiver "OFF" with the A.C. power applied.**
2. **Measure TP96 (A23 pin 21) for the frequency of the waveform and record the reading.**

NOTE

3. TP96 (A23 pin 21) measurement must have at least four digits of resolution following the decimal point. Example: 000.0000
4. Place the receiver into service mode for making electronic adjustment, select the clock adjustment DAC “CLOCK”.
5. Calculate and set “CLOCK” based on the following formula:

$$CLOCK = 128 + (0.450)\times 10^{6}\frac{\{(732.4220) - TP96[\mathrm{Hz}]\}}{(732.4220)}$$

NOTE
TP96 (A23 pin 21) measurement will not change regardless of the value stored in CLOCK.

15.12. Service Adjustments Mechanical Controls

WIDTH CORRECTION ADJUSTMENT

Note
Perform this adjustment only when FBT is changed.

Preparation
Connect the DVM (digital voltage meter) (+) lead to connector D10 pin-2 or TPQ27; and (-) lead to connector D10 pin-4.

Procedure

1. Apply a black pattern.
2. Adjust R524 on D-Board so that the voltage on connector D10 pin-2 or TPQ27 is 1.8±0.1V on D-Board.

FOCUS (PART OF T551)

Preparation
Apply a crosshatch pattern with dots.

Procedure

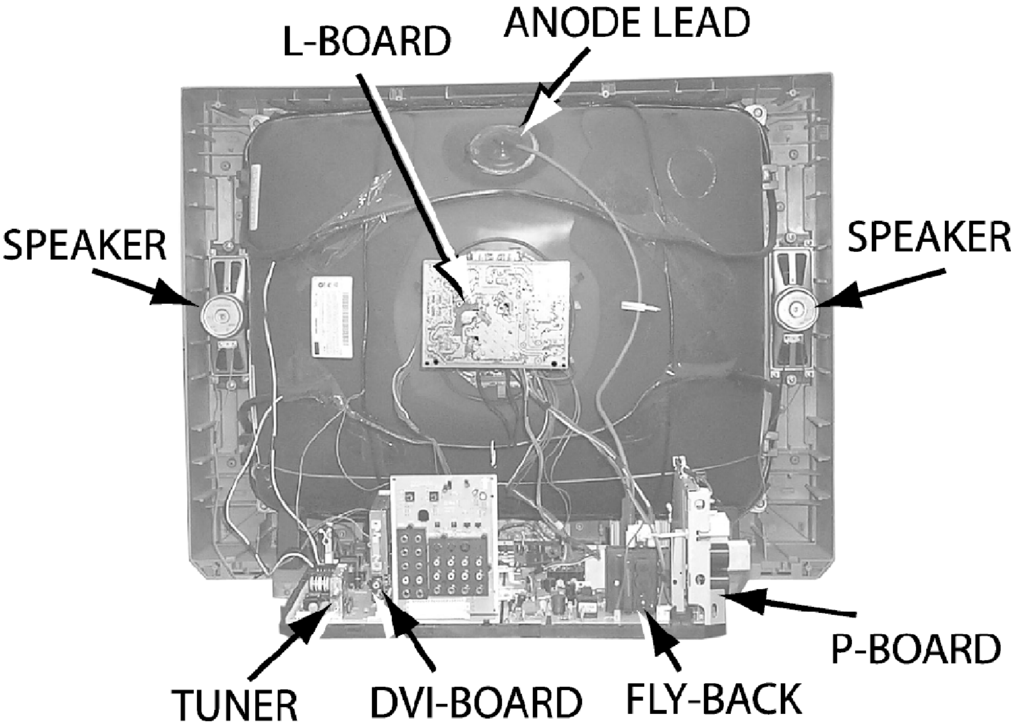
1. **Adjust the FOCUS control to obtain the sharpest and clearest dot pattern.**

   - **F1 focus control adjusts vertically.**
   - **F2 focus control adjusts horizontally.**
   - **Use this two controls to adjust focus, until best overall picture is obtained.**

16. Identification of components

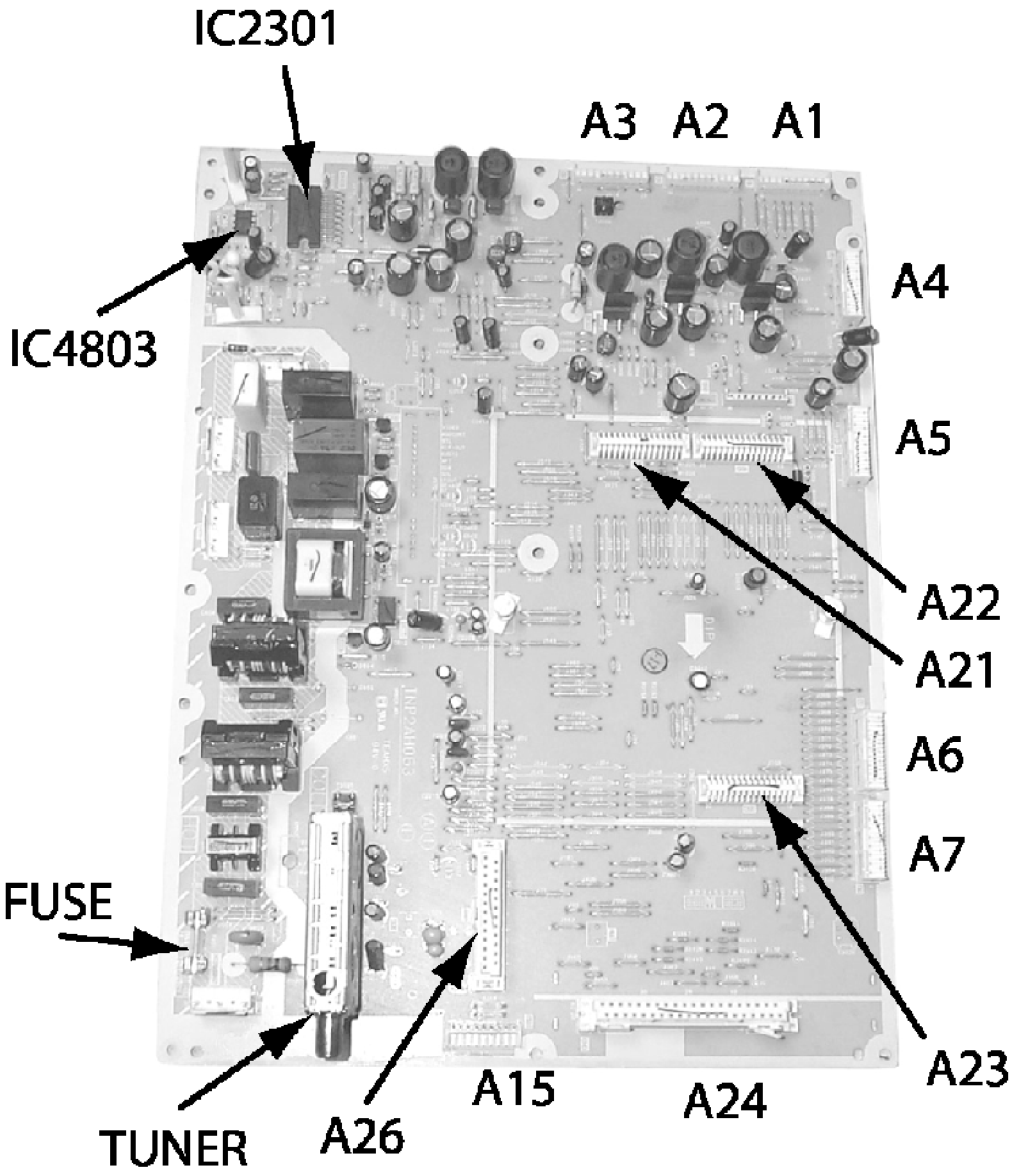
16.1. TV with back cover removed

TV View withback cover removed


L-BOARD
ANODE LEAD
SPEAKER
SPEAKER
P-BOARD
TUNER
DVI-BOARD
FLY-BACK

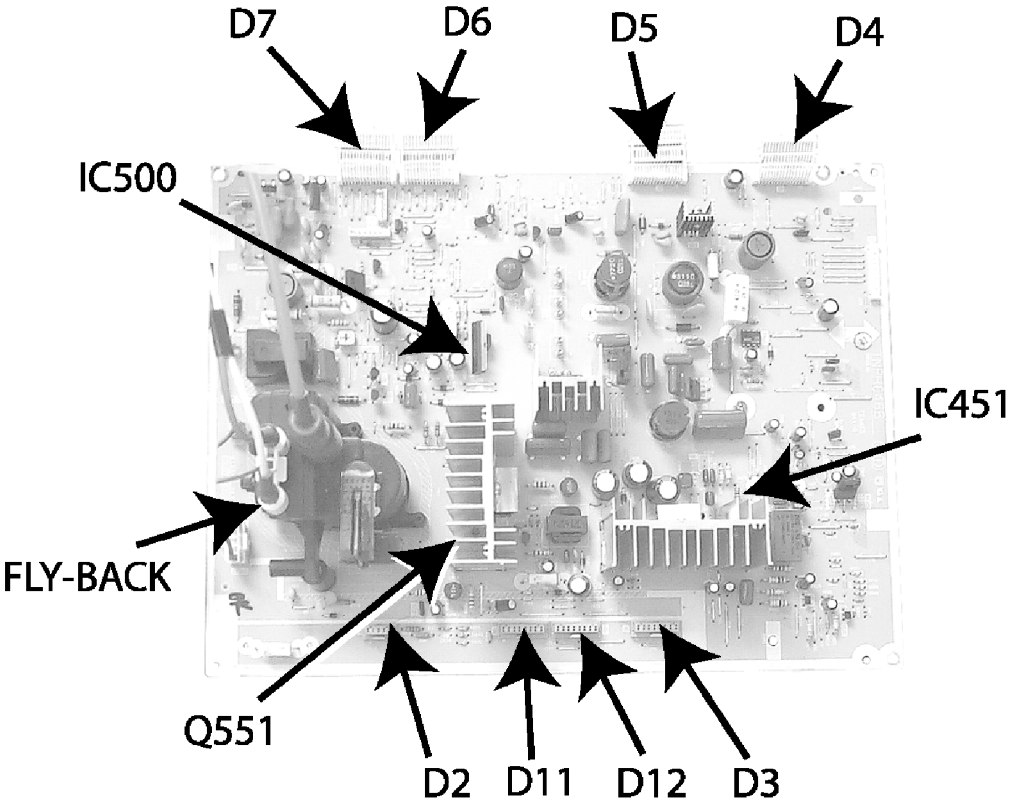
16.2. A-Board

A-Board view


IC2301
A3
A2
A1
IC4803
A4
A5
A22
A21
A6
A7
FUSE
A23
A15
A24
TUNER
A26

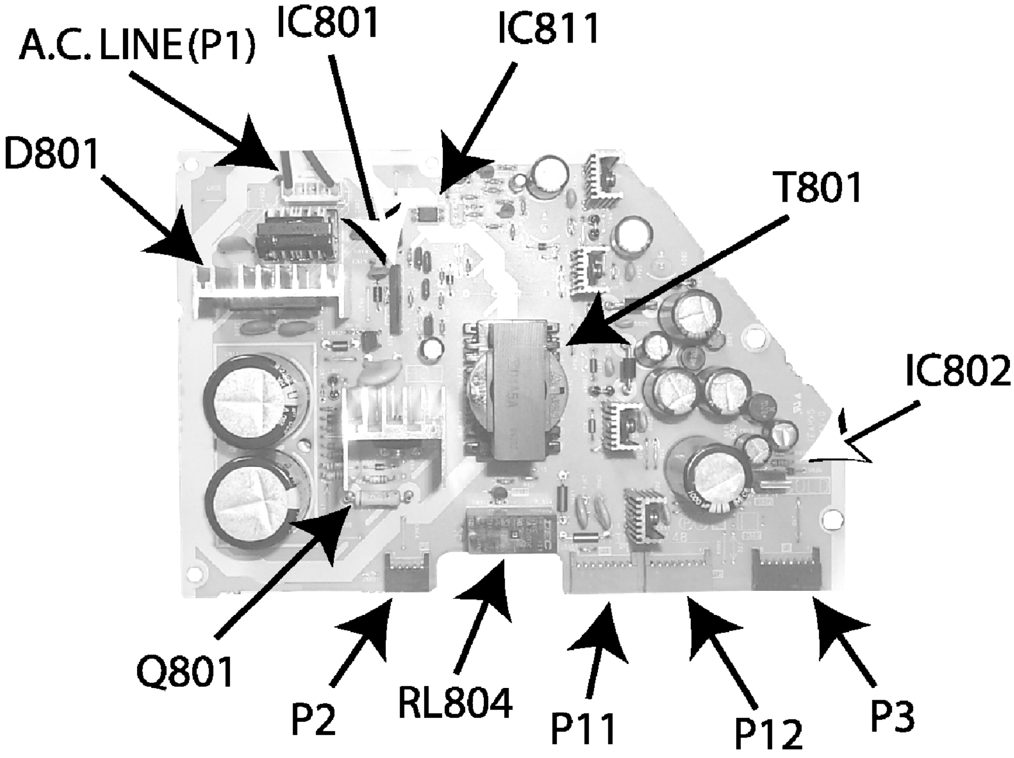
16.3. D-Board

D-Board view


D7
D6
D5
D4
IC500
IC451
FLY-BACK
Q551
D2
D11
D12
D3

16.4. P-Board

P-Board view

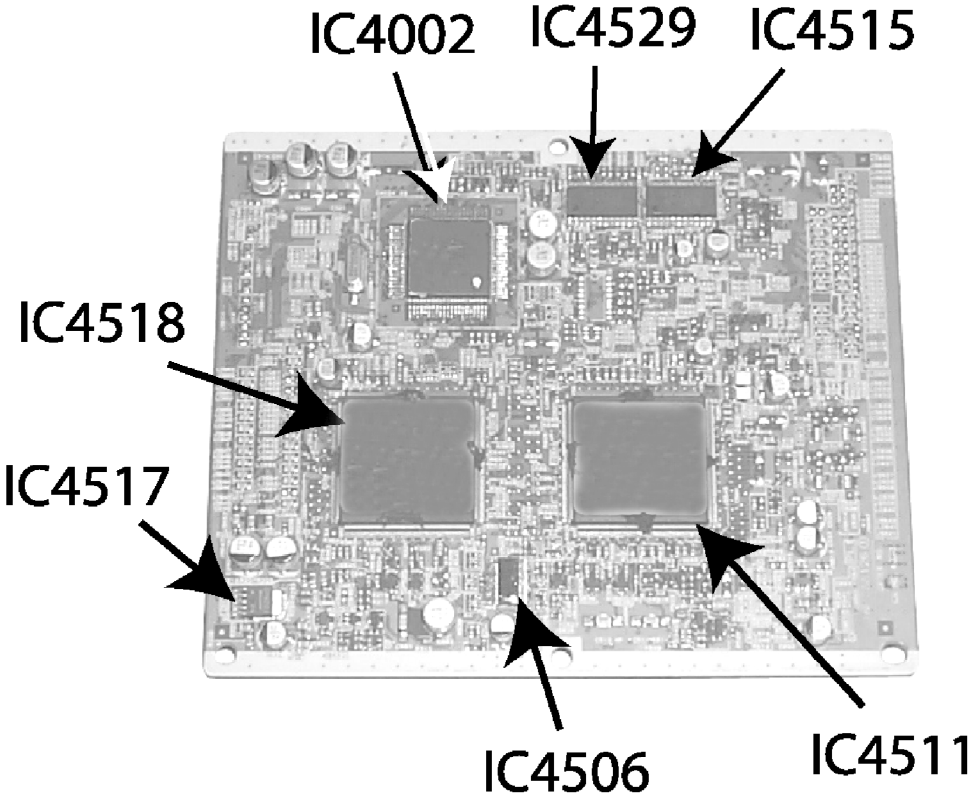

A.C. LINE (P1)
IC801
IC811
D801
T801
IC802
Q801
P2
RL804
P11
P12
P3

NOTE:

Heat sinks may not be present on same components as from the above picture

16.5. DG-Board top

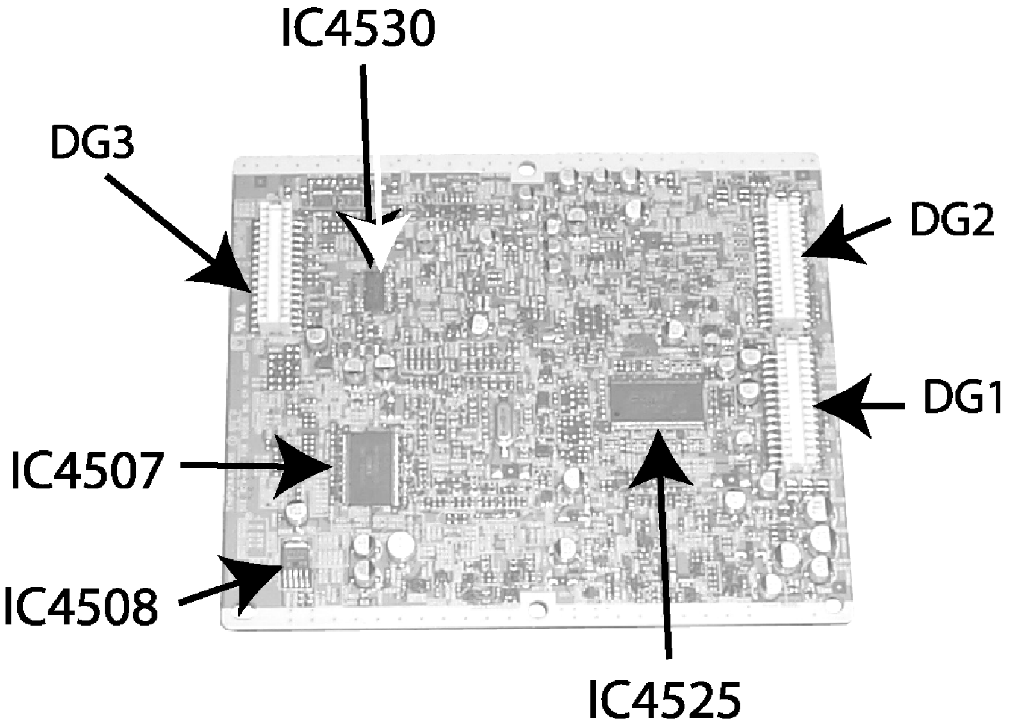
DG-Board top view


IC4002
IC4529
IC4515
IC4518
IC4517
IC4506
IC4511

NOTE:
Please ADD "4" to all IC part numbers, EXAMPLE: On board is IC506, then by adding "4" is IC4506

16.6. DG-Board bottom

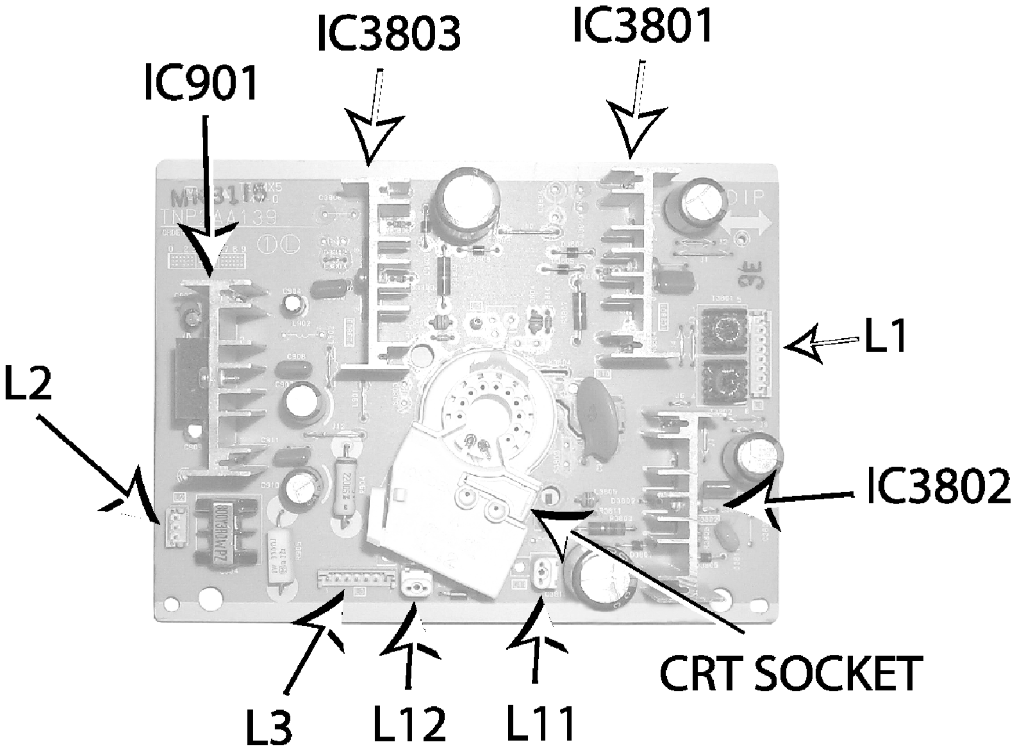
DG-Board bottom view


IC4530
DG3
DG2
DG1
IC4507
IC4508
IC4525

NOTE:
Please ADD “4” to all IC part numbers, EXAMPLE: On board is IC525, then by adding “4” is IC4525

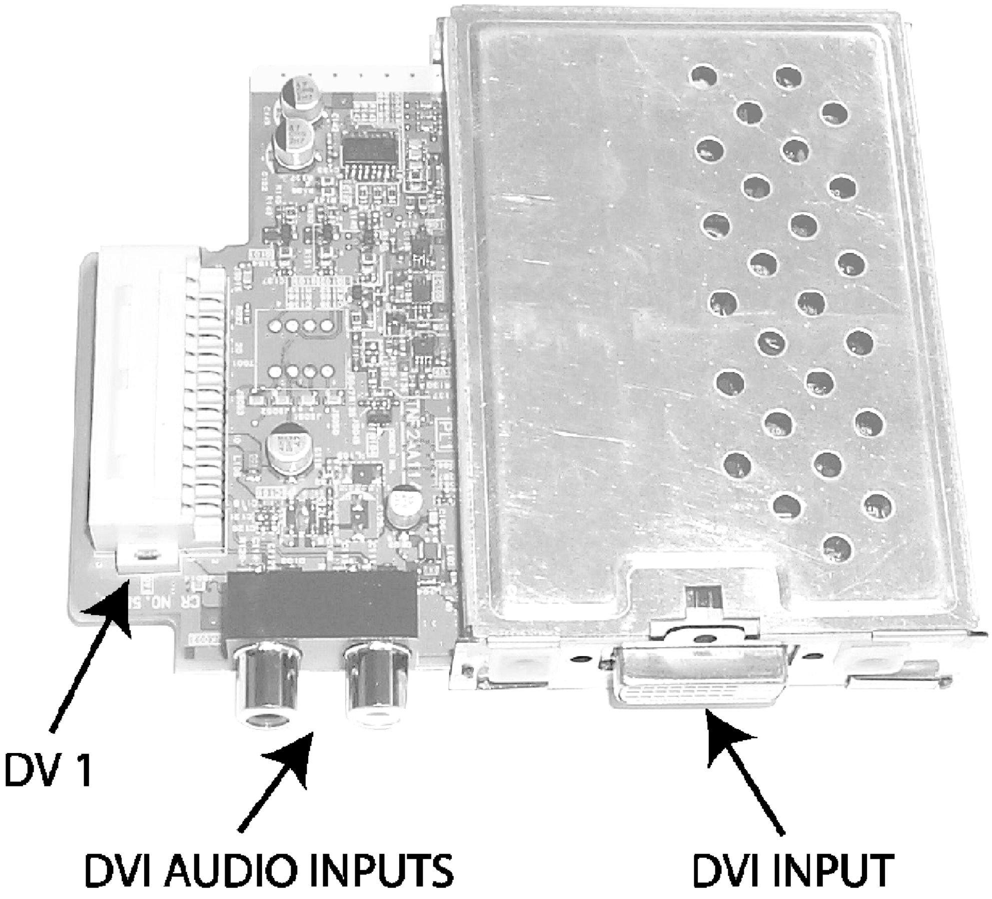
16.7. L-Board

L-Board view


IC3803
IC3801
IC901
L1
L2
IC3802
CRT SOCKET
L3
L12
L11

16.8. DV-Board

DV-Board view


DV 1
DVI AUDIO INPUTS
DVI INPUT

17. Reference of PDF links color

DESCRIPTION OF PDF LINK COLORS	
TYPE	DESTINATION
SCHEMATIC	
YELLOW ON IC	IC ON PCB
YELLOW ON CONNECTOR	CONNECTOR ON PCB
YELLOW ON SCHEMATIC	PCB
CYAN	WAVEFORM
GREEN ON SIDE	SCHEMATIC CONTINUED
GREEN ON CONNECTOR	CONNECTOR CONNECTION
BLUE ON IC	VOLTAGE
PCB	
BLUE ON IC	IC ON SCHEMATIC
BLUE ON CONNECTOR	CONNECTOR ON SCHEMATIC
BLUE ON PCB	SCHEMATIC
GREEN ON SIDE	PCB CONTINUED
BLOCK DIAGRAMS	
GREEN ON IC	IC ON SCHEMATIC
GREEN ON SIDE	BLOCK DIAGRAM CONTINUED

18. Conductor Views

18.1. A-Board 1 of 2

18.2. A-Board 2 of 2

18.3. D-Board 1 of 2

18.4. D-Board 2 of 2

18.5. DG-Board top 1 of 2

18.6. DG-Board top 2 of 2

18.7. DG-Board bottom 1 of 2

18.8. DG-Board bottom 2 of 2

18.9. DV-Board top 1 of 2

18.10. DV-Board top 2 of 2

18.11. DV-Board bottom 1 of 2

18.12. DV-Board bottom 2 of 2

18.13. P-Board

18.14. L-Board

18.15. H-Board

18.16. K-Board

18.17. G-Board 1 of 2

18.18. G-Board 2 of 2

19. Block Diagrams

19.1. Audio Block Diagram

19.2. Video Block Diagram

20. Schematic Diagrams

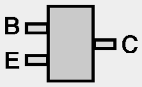
20.1. Schematic notes in english

Notes:

IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

CHIP TRANSISTOR LEAD DESIGNATION



SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ● ; Test point but no pin ○.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⊥ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

VOLTAGE MEASUREMENTS

1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

CAUTION: ***Incorrect ground connection of the test equipment will result in erroneous readings.***

WAVEFORM MEASUREMENTS

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to “MIN”.
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

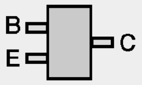
20.2. Schematic notes in spanish

Notas

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



NOTAS DE LOS DIAGRAMAS

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en μH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⫯ Los puntos de prueba fuera de los componentes se indican con ⫯.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⊥ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

MEDICIÓN DE VOLTAJES

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: SI no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

MEDICIÓN DE FORMAS DE ONDA

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.

banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.

5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán

ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de

mediciones equivocadas y podría dañar el equipo de medición.

20.3. A-Board schematic 1 of 3

20.4. A-Board schematic 2 of 3

20.5. A-Board schematic 3 of 3

20.6. D-Board schematic 1 of 3

20.7. D-Board schematic 2 of 3

20.8. D-Board schematic 3 of 3

20.9. DG-Board schematic 1 of 5

20.10. DG-Board schematic 2 of 5

20.11. DG-Board schematic 3 of 5

20.12. DG-Board schematic 4 of 5

20.13. DG-Board schematic 5 of 5

20.14. DV-Board schematic 1 of 2

20.15. DV-Board schematic 2 of 2

20.16. P-Board schematic 1 of 2

20.17. P-Board schematic 2 of 2

20.18. L-Board schematic 1 of 2

20.19. L-Board schematic 2 of 2

20.20. H-Board schematic 1 of 2

20.21. H-Board schematic 2 of 2

20.22. K-Board schematic

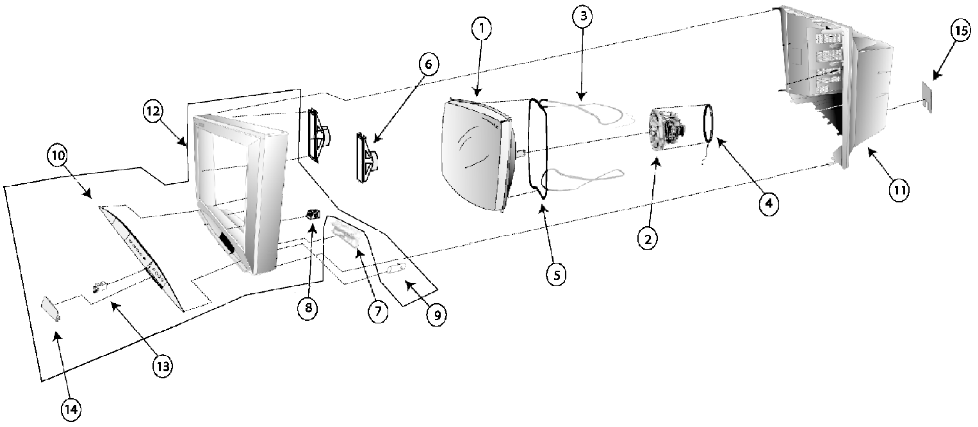
20.23. G-Board schematic 1 of 2

20.24. G-Board schematic 2 of 2

20.25. Voltages

20.26. Waveforms

21. Parts Location



22. Parts list

22.1. Description of abbreviations guide

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use manufacturer's specified parts.

Abbreviation of part name and description

1. Resistor

Example :
ERD25TJ104 **C** 100KΩ, **J**, 1/4W
Type Allowance

Type	Allowance
C : Carbon	F : ± 1%
F : Fuse	G : ± 2%
M : Metal Oxide Metal Film	J : ± 5% K : ± 10%
S : Solid	M : ± 20%
W : Wire Wound	

2. Capacitor

Example :
ECKF1H103ZF **C** 0.01μF, **Z**, 50V
Type Allowance

Type	Allowance
C : Carbon	C : ± 0.25pF
E : Electrolytic	D : ± 0.5pF
P : Polyester Polypropylene	F : ± 1pF G : ± 3%
T : Tantalum	J : ± 5%
	K : ± 10%
	L : ± 15%
	M : ± 20%
	P : ± 100%, -0%
	Z : ± 80%, -20%

22.2. Parts list

Ref. No.	Part No.	Part Name & Description	Remarks
CAPACITORS			
C038	ECA1VM470B	CAP,E 47UF-35V	
C039	ECA1HM4R7B	CAP,E 4.7UF-50V	
C041	ECA1HM2R2B	CAP,E 2.2UF-50V	
C050	TCJ2VC1H101J	CAP,C 100PF-J-50V	
C058	ECA1HMR22B	CAP,E .22UF-50V	
C060	ECA1HM4R7B	CAP,E 4.7UF-50V	
C405	ECA1HM102E	CAP,E 1000UF-50V	
C406	ECA1EM102E	CAP,E 1000UF-25V	
C407	ECKR1H103ZF5	CAP,C .01UF-Z-50V	
C408	ECA1VM102E	CAP,E 1000UF-35V	
C409	ECA1VM102E	CAP,E 1000UF-35V	
C411	ECQB1H472JF3	CAP,P 4700PF-J-50V	
C412	ECQB1224KF3	CAP,P .22UF-K-100V	
C413	ECA1HM010B	CAP,E 1UF-50V	
C414	ECQB1H272JF3	CAP,P 2700PF-J-50V	
C415	ECQB1473KF3	CAP,P .047UF-K-100V	
C416	ECQB1H472JF3	CAP,P 4700PF-J-50V	
C419	EEUNA1A470B	CAP,E 47UF-125V	
C420	ECA1CM101B	CAP,E 100UF-16V	
C421	ECA1CM101B	CAP,E 100UF-16V	
C422	ECA1HM010B	CAP,E 1UF-50V	
C434	ECA1HM100B	CAP,E 10UF-50V	
C438	ECQB1H102JF3	CAP,P 1000PF-J-50V	
C439	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C440	ECA1HM100B	CAP,E 10UF-50V	
C457	ECEA1EN4R7UB	CAP,E 4.7UF-25V	
C501	ECA1VHG101B	CAP,E 100UF-35V	
C502	ECQV1H104JL3	CAP,P .10UF-J-50V	
C503	ECKR2H102KB5	CAP,C 1000PF-K-500V	
C506	ECA1CM471B	CAP,E 470UF-16V	
C509	ECKR3A222KBP	CAP,C .0022UF-K-1KV	
C510	TCJ2VC1H221J	CAP,C 220PF-J-50V	
C511	ECWH20562JVB	CAP,P 5600PF-J-2KV	⚠
C513	ECQF6103JZH	CAP,P .010UF-J-630V	⚠
C514	ECWH20272JVY	CAP,P 2700PF-J-2KV	⚠
C515	ECKR3A222KBP	CAP,C .0022UF-K-1KV	
C516	ECWF2224JSR	CAP,M .22UF-J-200V	⚠
C517	ECWF2684JSR	CAP,M .26UF-J-200V	⚠
C518	ECKW3D681KBR	CAP,C 680PF-K-2KV	⚠
C519	ECKW3D681KBR	CAP,C 680PF-K-2KV	⚠
C520	ECQB1H183JF3	CAP,P .018UF-J-50V	⚠
C521	ECWF2224JSR	CAP,M .22UF-J-200V	⚠
C522	ECWH20202JVY	CAP,P 2000PF-J-2KV	⚠
C523	ECWH20562JVB	CAP,P 5600PF-J-2KV	⚠
C524	ECQB1224JF3	CAP,P .22UF-J-100V	
C525	ECA1HM470B	CAP,E 47UF-50V	
C526	ECA2EM470E	CAP,E 47UF-250V	
C527	ECKR2H102KB5	CAP,C 1000PF-K-500V	
C528	ECA1HM4R7B	CAP,E 4.7UF-50V	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C530	ECQE2155JFB	CAP,P 1.5UF-J-200V	
C531	ECA160V33UE	CAP,E 33UF-160V	
C532	ECQF6472JZH	CAP,P .47UF-J-630V	⚠
C535	ECA1HHG471E	CAP,E 470PF-E-50V	
C536	ECEA1HN100UB	CAP,E 10UF-50V	
C537	ECQB1H473JF3	CAP,P .047UF-J-50V	
C538	ECA1CM471B	CAP,E 470UF-16V	
C539	ECA1CM471B	CAP,E 470UF-16V	
C541	ECQE2333JFB	CAP,P .033UF-J-200V	⚠
C573	ECQB1H104JF3	CAP,P .10UF-J-50V	
C574	ECA1CM470B	CAP,E 47UF-16V	
C575	ECKR1H103ZF5	CAP,C .01UF-Z-50V	
C701	ECQB1H182JF3	CAP,P 1800PF-J-50V	
C704	ECQB1H152JF3	CAP,P 1500PF-J-50V	
C705	TCJ2VC1H681J	CAP,C 680PF-J-50V	
C706	ECKW3D271JBP	CAP,C 270PF-J-2KV	
C709	ECQE1106KFB	CAP,P 10UF-K-1KV	
C712	ECKR1H221KB5	CAP,C 220PF-K-50V	
C713	ECKR1H221KB5	CAP,C 220PF-K-50V	
C714	ECA1HM2R2B	CAP,E 2.2UF-50V	
C759	ECQM2104KZW	CAP,P .1UF-K-200V	
C801	ECQU2A104BN9	CAP,P .10UF-B-250V	⚠
C802	ECQU2A823BN9	CAP,P .082UF-B-250V	⚠
C803	ECQU2A823BN9	CAP,P .082UF-B-250V	⚠
C804	ECQU2A823BN9	CAP,P .082UF-B-250V	⚠
C805	ECKW2H472PU7	CAP,C 4700PF-P-500V	⚠
C806	ECKW2H472PU7	CAP,C 4700PF-P-500V	⚠
C807	ECKW2H472PU7	CAP,C 4700PF-P-500V	⚠
C808	ECQB1H102JF3	CAP,P 1000PF-J-50V	
C809	ECQB1H333JF3	CAP,P .033UF-J-50V	
C810	EC0S2DA821DB	CAP,E 820UF-200V	⚠
C811	EC0S2DA821DB	CAP,E 820UF-200V	⚠
C812	ECA1CM471B	CAP,E 470UF-16V	
C813	ECA1HM010B	CAP,E 1UF-50V	
C814	ECKW2H472PU7	CAP,C 4700PF-P-500V	⚠
C815	ECA1EM471B	CAP,E 470UF-25V	
C816	ECKW3A272KBP	CAP,C 2700PF-K-1KV	
C817	ECQB1H332JF3	CAP,P 3300PF-J-50V	
C819	TACCQ221T50V	CAP,C 220PF-J-50V	
C820	ECA1EHG221B	CAP,E 220UF-25V	
C821	ECKW3D272KBP	CAP,C 2700PF-K-2KV	
C822	ECQB1H393JF3	CAP,P .039UF-J-50V	
C823	ECQB1H222JF3	CAP,P 2200PF-J-50V	
C826	ECA1VM221B	CAP,E 220UF-35V	
C827	ECQB1H333JF3	CAP,P .033UF-J-50V	
C828	ECKR3A331KBP	CAP,C 330PF-K-1KVDC	
C830	EETHC2C102H	CAP,E 1000UF-160V	⚠
C831	ECKR3A102KBP	CAP,C 1000PF-K-1KV	
C832	ECA1VHG102E	CAP,E 1000UF-35V	
C833	ECKR3A471KBP	CAP,C 470PF-K-1KV	

Ref. No.	Part No.	Part Name & Description	Remarks
C834	EEUFC1V222E	CAP,E 2200UF-35V	
C836	ECKW3A272KBP	CAP,C 2700PF-K-1KV	
C838	EEUFC1E272E	CAP,E 2700UF-25V	
C839	ECKR3A151KBP	CAP,C 150PF-K-1KV	
C840	ECA1EMH471B	CAP,E 470UF-25V	
C841	ECA1EM222E	CAP,E 2200UF-25V	
C842	ECKR3A331KBP	CAP,C 330PF-K-1KVDC	
C843	ECA1VHG102E	CAP,E 1000UF-35V	
C844	ECKR3A471KBP	CAP,C 470PF-K-1KV	
C845	ECA1CM101B	CAP,E 100UF-16V	
C846	ECA1HM010B	CAP,E 1UF-50V	
C847	ECA1VM470B	CAP,E 47UF-35V	
C848	ECA1CM101B	CAP,E 100UF-16V	
C850	EEUFC1E272E	CAP,E 2700UF-25V	
C851	ECA1CM221B	CAP,E 10UF-16V	
C856	ECQU2A103MNB	CAP,P .010UF-M-250V	⚠
C857	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C859	ECA1VHG471B	CAP,E 470UF-35V	
C860	ECKCNA222MEB	CAP,C 2200PF-M-125V	⚠
C861	ECKCNA222MEB	CAP,C 2200PF-M-125V	⚠
C876	ECA1EM471B	CAP,E 470UF-25V	
C877	EEUFC1A471B	CAP,E 470UF-10V	
C878	ECA1EM471B	CAP,E 470UF-25V	
C879	EEUFC1A471B	CAP,E 470UF-10V	
C880	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C885	ECA1VM471B	CAP,E 470UF-35V	
C886	EEUFC1C471B	CAP,E 470UF-16V	
C887	ECA1CM471B	CAP,E 470UF-16V	
C888	ECA1EM101B	CAP,E 100UF-25V	
C889	ECA1CM101B	CAP,E 100UF-16V	
C890	ECA1CM221B	CAP,E 10UF-16V	
C891	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C892	ECA0JM221B	CAP,E 220UF-6.3V	
C893	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C894	ECA1VM101B	CAP,E 100UF-35V	
C895	ECA1CM221B	CAP,E 10UF-16V	
C896	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C897	ECA1EM471B	CAP,E 470UF-25V	
C898	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C899	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C901	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C902	ECA1CM101B	CAP,E 100UF-16V	
C904	ECA1CM101B	CAP,E 100UF-16V	
C906	ECA1CM101B	CAP,E 100UF-16V	
C907	ECA2EM220E	CAP,E 22UF-250V	
C908	ECQE2103KF3	CAP,P .010UF-K-200V	
C909	ECA1CM101B	CAP,E 100UF-16V	
C910	ECA2CM100B	CAP,E 10UF-160V	
C911	ECQE2103KF3	CAP,P .010UF-K-200V	
C1024	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C1025	ECA0JM222B	CAP,E 2200UF-6.3V	
C1051	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C1052	ECA1AM470B	CAP,E 47UF-10V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1504	ECQB1H103JF3	CAP,P .01UF-J-50V	
C1505	ECA1CM470B	CAP,E 47UF-16V	
C1506	TCJ2VF1H102Z	CAP,C 1000PF-Z-50V	
C1507	ECA1CM220B	CAP,E 22UF-16V	
C1508	ECKW3D151KBP	CAP,C 150PF-K-2KV	
C1509	ECQM6223KZW	CAP,P .022UF-K-600V	
C1510	ECQM4223KZW	CAP,P .022UF-K-400V	
C1511	ECA1HM010B	CAP,E 1UF-50V	
C1512	ECKW3D102KBP	CAP,C 1000PF-K-2KV	
C1513	ECKW3D471KBP	CAP,C 470PF-K-2KVDC	
C1515	ECKR3A152KBP	CAP,C 1500PF-K-1KVDC	
C1516	ECKR3A561KBP	CAP,C 560PF-K-1KV	
C1517	ECKR3A151KBP	CAP,C 150PF-K-1KV	
C1518	ECKR3A102KBP	CAP,C 1000PF-K-1KV	
C1519	ECA1VM470B	CAP,E 47UF-35V	
C1520	ECA1HM100B	CAP,E 10UF-50V	
C1521	ECA0JM331B	CAP,E 330UF-6.3V	
C2202	ECEA1HKA2R2B	CAP,E 2.2UF-50V	
C2203	ECEA1HKA4R7B	CAP,E 4.7UF-50V	
C2204	AP106K016CAE	CAP,T 1OUF-16V	
C2205	ECA1HM010B	CAP,E 1UF-50V	
C2206	ECQB1H223JF3	CAP,P .022UF-J-50V	
C2207	AP335K016CAE	CAP,T 3.3UF-16V	
C2208	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2209	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2210	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2211	ECA1HM100B	CAP,E 10UF-50V	
C2212	ECQB1H473JF3	CAP,P .047UF-J-50V	
C2215	ECA1CM101B	CAP,E 100UF-16V	
C2218	ECA1HMR47B	CAP,E .47UF-50V	
C2301	ECJ2VF1C474Z	CAP,C .47UF-Z-16V	
C2301	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2302	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2303	ECJ2VB1H332K	CAP,C .0033UF-K-50V	
C2304	ECJ2VB1H332K	CAP,C .0033UF-K-50V	
C2305	ECJ2VF1C474Z	CAP,C .47UF-Z-16V	
C2305	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2306	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2307	ECJ2VB1H332K	CAP,C .0033UF-K-50V	
C2308	ECJ2VB1H332K	CAP,C .0033UF-K-50V	
C2310	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C2312	ECA1VM101B	CAP,E 100UF-35V	
C2316	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C2317	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C2318	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2322	ECJ2VF1C474Z	CAP,C .47UF-Z-16V	
C2324	ECJ2VF1C474Z	CAP,C .47UF-Z-16V	
C2325	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2326	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C2327	ECA1HM010B	CAP,E 1UF-50V	
C2328	ECA1EM101B	CAP,E 100UF-25V	
C2329	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C2330	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2331	ECA1EM101B	CAP,E 100UF-25V	

Ref. No.	Part No.	Part Name & Description	Remarks
C2331	ECA1HM100B	CAP,E 10UF-50V	
C2332	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2333	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2334	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C2343	ECEA1CN100UB	CAP,E 10UF-16V	
C2348	ECA1HM100B	CAP,E 10UF-50V	
C2349	ECEA1CN100UB	CAP,E 10UF-16V	
C2350	ECEA1HN010UB	CAP,E 1UF-50V	
C2351	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2352	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2353	ECEA1HN010UB	CAP,E 1UF-50V	
C2354	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2355	ECJ2VB1H561K	CAP,C 560PF-K-50V	
C2356	ECA1EM220B	CAP,E 22UF-25V	
C2357	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C2358	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2359	ECQV1H474JL3	CAP,P .47UF-J-50V	
C2360	ECJ2VB1H153K	CAP,C .015UF-K-50V	
C2361	ECJ2VF1H224Z	CAP, C .22UF-Z-50V	
C2362	ECQV1H474JL3	CAP,P .47UF-J-50V	
C2363	ECJ2VB1H153K	CAP,C .015UF-K-50V	
C2364	ECA1HM220B	CAP,E 22UF-50V	
C2365	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2366	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2367	EEUFC1E471B	CAP,E 470UF-25V	
C2368	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2369	EEUFC1E471B	CAP,E 470UF-25V	
C2386	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2387	EEUFC1E471B	CAP,E 470UF-25V	
C2389	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2390	EEUFC1E471B	CAP,E 470UF-25V	
C2391	ECJ2VF1H224Z	CAP,C .22UF-Z-50V	
C2451	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2452	TCJ2VB1H332K	CAP,C .0033UF-K-50V	
C2453	TCJ2VB1H333K	CAP,C .033UF-K-50V	
C2454	ECA1HM010B	CAP,E 1UF-50V	
C2455	TCJ2VB1H472K	CAP,C 4700PF-K-50V	
C2456	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2457	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2458	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2459	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2460	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2461	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2462	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2463	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2464	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2465	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C2466	TCJ2VB1H472K	CAP,C 4700PF-K-50V	
C2467	ECA1HM010B	CAP,E 1UF-50V	
C2468	TCJ2VB1H333K	CAP,C .033UF-K-50V	
C2469	TCJ2VB1H332K	CAP,C .0033UF-K-50V	
C2470	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C2471	ECA1CM101B	CAP,E 100UF-16V	
C2474	ECA1CM101B	CAP,E 100UF-16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C2475	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C3001	ECA1CM470B	CAP,E 47UF-16V	
C3002	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C3004	ECA1CM470B	CAP,E 47UF-16V	
C3010	ECEA1CKA101B	CAP,E 100UF-16V	
C3011	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C3012	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C3013	ECEA1CKA101B	CAP,E 100UF-16V	
C3014	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3015	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C3016	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C3017	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C3018	ECEA1CKA100B	CAP,E 10UF-16V	
C3020	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3021	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3031	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3032	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3033	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3034	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3035	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3036	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3037	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3038	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3039	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C3042	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3043	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3044	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3045	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3046	TCJ2VB1H103K	CAP,C .01UF-K-50V	
C3049	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3050	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3051	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3052	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3054	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3055	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3056	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C3057	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3058	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3059	ECA1CM471B	CAP,E 470UF-16V	
C3100	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3102	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3104	ECJ2VF1H103Z	CAP,C .01UF-Z-50V	
C3106	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3109	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3111	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3115	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3117	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3121	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3126	ECJ2YB1A105K	CAP,C 1.0UF-K-125V	
C3127	ECJ2YB1A105K	CAP,C 1.0UF-K-125V	
C3128	ECJ2YB1A105K	CAP,C 1.0UF-K-125V	
C3132	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3154	ECA1HM010B	CAP,E 1UF-50V	
C3155	ECA1HM010B	CAP,E 1UF-50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C3158	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3159	TCJ2VB1H152K	CAP,C 1500PF-K-50V	
C3160	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3161	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3162	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3163	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3164	TCJ2VB1H102K	CAP,C 1000PF-K-50V	
C3165	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3166	TCJ2VB1H102K	CAP,C 1000PF-K-50V	
C3167	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3168	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3170	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3172	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3173	TCJ2VB1H102K	CAP,C 1000PF-K-50V	
C3174	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3175	TCJ2VB1H102K	CAP,C 1000PF-K-50V	
C3182	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3183	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3184	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3185	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3186	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3187	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3188	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3189	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3190	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3191	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3192	TCJ2VB1H102K	CAP,C 1000PF-K-50V	
C3193	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V	
C3194	ECJ2VB1H102K	CAP,C .001UF-K-50V	
C3801	ECQE2104KFW	CAP,P .10UF-K-200V	
C3802	ECQE2104KFW	CAP,P .10UF-K-200V	
C3803	ECQE2104KFW	CAP,P .10UF-K-200V	
C3807	ECA2EM470E	CAP,E 47UF-250V	
C3808	ECA2EM470E	CAP,E 47UF-250V	
C3809	ECA2EM101E	CAP,E 100UF-250V	
C3810	ECA2EM101E	CAP,E 100UF-250V	
C3811	ECKC3D332KBN	CAP,C 3300PF-K-2KV	
C4805	ECA1CM101B	CAP,E 100UF-16V	
C4805	ECA1CM470B	CAP,E 47UF-16V	
C4806	ECA1CM471B	CAP,E 470UF-16V	
C4913	ECEA1CN100UB	CAP,E 10UF-16V	
C4914	ECEA1CN100UB	CAP,E 10UF-16V	
C4915	ECA1CM220B	CAP,E 22UF-16V	
C4916	ECEA1CN220UB	CAP,E 22UF-16V	
C4917	ECEA1CN220UB	CAP,E 22UF-16V	
C4920	ECJ2VF1H104Z	CAP,C .1UF-Z-50V	
C4921	ECA1CM470B	CAP,E 47UF-16V	
C4922	ECJ2VB1C104K	CAP,C .1UF-K-16V	
C4923	ECA1VM470B	CAP,E 47UF-35V	
C4924	ECA1VM470B	CAP,E 47UF-35V	
C4925	ECQB1H104JF3	CAP,P .10UF-J-50V	
C4930	EEUFC1E470B	CAP,E 47UF-25V	
		DIODES	
D006	MAZ43000HF	DIODE, ZENER	

Ref. No.	Part No.	Part Name & Description	Remarks
D009	MA2C165001VT	DIODE	
D010	MAZ40300MF	DIODE, ZENER	
D13	K1ZZ00001205	DIODE	
D402	MAZ42700MF	DIODE, ZENER	
D404	MA2C165001VT	DIODE	
D405	B0EAKM000018	DIODE, RECTIFIER	
D406	B0EAKM000018	DIODE, RECTIFIER	
D407	MA2C165001VT	DIODE	
D408	MA2C165001VT	DIODE	
D410	MA2C165001VT	DIODE	
D411	MA2C165001VT	DIODE	
D412	MA2C165001VT	DIODE	
D452	MA2C165001VT	DIODE	
D468	MAZ40620MF	DIODE, ZENER	
D477	MA2C029WBF	DIODE	
D501	D1NL40V70	DIODE	
D502	MAZ41500MF	DIODE, ZENER	
D503	B0KZ00000001	DIODE	
D505	MAZ40330MF	DIODE, ZENER	
D509	MA2C165001VT	DIODE	
D510	MAZ40820MF	DIODE, ZENER	
D511	D1NL40V70	DIODE	
D512	D1NL40V70	DIODE	⚠
D515	D1NL40V70	DIODE	
D516	MAZ40510LF	DIODE, ZENER	
D517	D1NL40V70	DIODE	
D518	D1NL40V70	DIODE	
D520	MA167TA5VT	DIODE, SWITCHING	
D550	B0HAMP000059	DIODE	
D703	D1NL40V70	DIODE	
D708	MAZ41500MF	DIODE, ZENER	
D711	B0AAGR000002	DIODE, SWITCHING	
D751	MA2C165001VT	DIODE	
D761	MA2C165001VT	DIODE	
D801	B0FDAT000001	DIODE	⚠
D802	MA2C700A0F	DIODE	
D803	D4DDF1R50001	DIODE	⚠
D804	MAZ41200MF	DIODE, ZENER	
D806	AU01ZV0	DIODE	
D807	MA2C165001VT	DIODE	
D809	D4EAC3910001	DIODE	⚠
D811	B0EAKL000008	DIODE, RECTIFIER	
D814	MA2C165001VT	DIODE	
D815	MA2C165001VT	DIODE	
D816	MA2C165001VT	DIODE	
D817	MAZ42200LF	DIODE, ZENER	
D818	MAZ42000MF	DIODE, ZENER	
D824	B0BA01000046	DIODE, ZENER	⚠
D826	FMLG12SLF116	DIODE	
D827	B0HANM000016	DIODE	
D828	FMLG12SLF116	DIODE	
D829	B0HANM000016	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D830	FMLG12SLF116	DIODE	
D831	MA2C165001VT	DIODE	
D832	MA2C165001VT	DIODE	
D833	MAZ41100HF	DIODE, ZENER	
D834	AU02ZV0	DIODE	
D836	AU02ZV0	DIODE	
D839	MAZ40390MF	DIODE, ZENER	
D840	MA2C165001VT	DIODE	
D845	MA2C165001VT	DIODE	
D846	MAZ41800HF	DIODE, ZENER	
D847	MAZ43000HF	DIODE, ZENER	
D848	MA2C165001VT	DIODE	
D850	MA2C165001VT	DIODE	
D851	MA2C165001VT	DIODE	
D861	B0JAME000052	DIODE	
D862	B0JAME000052	DIODE	
D874	B0JCME000025	DIODE	
D875	B0JCME000025	DIODE	
D876	MA2C165001VT	DIODE	
D877	MA2C165001VT	DIODE	
D878	B0JCME000025	DIODE	
D889	MA2C165001VT	DIODE	
D893	MA2C165001VT	DIODE	
D894	MA2C165001VT	DIODE	
D898	MA2C165001VT	DIODE	
D899	MA2C165001VT	DIODE	
D1001	LN81RPH	DIODE	
D1501	MAZ40750HF	DIODE, ZENER	
D1503	MAZ40300HF	DIODE, ZENER	⚠
D1504	MAZ40200HF	DIODE, ZENER	
D1505	B0HACW000002	DIODE	
D1508	MA2C165001VT	DIODE	
D1509	AU02AV0	DIODE	
D1510	AU02AV0	DIODE	
D1513	MA2C165001VT	DIODE	
D2301	MAZ42700MF	DIODE, ZENER	
D2302	MAZ42700MF	DIODE, ZENER	
D2304	MA3X152K0L	DIODE	
D2305	MA3X152K0L	DIODE	
D2306	MA3X152K0L	DIODE	
D2307	MA3X152K0L	DIODE	
D2309	MAZ42700MF	DIODE, ZENER	
D2310	MA3X152K0L	DIODE	
D2311	MA3X152K0L	DIODE	
D2312	MAZ41000LF	DIODE, ZENER	
D2315	MA2C165001VT	DIODE	
D2319	MAZ40330MF	DIODE, ZENER	
D2320	MAZ33000ML	DIODE	
D2321	MAZ33000ML	DIODE	
D3001	MAZ31100ML	DIODE, ZENER	
D3002	MAZ31100ML	DIODE, ZENER	
D3003	MAZ31100ML	DIODE, ZENER	
D3004	MAZ31100ML	DIODE, ZENER	
D3005	MAZ31100ML	DIODE, ZENER	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
D3006	MAZ31100ML	DIODE, ZENER	
D3007	MAZ31100ML	DIODE, ZENER	
D3008	MAZ31100ML	DIODE, ZENER	
D3009	MAZ31100ML	DIODE, ZENER	
D3010	MAZ31100ML	DIODE, ZENER	
D3011	MAZ31100ML	DIODE, ZENER	
D3012	MAZ31100ML	DIODE, ZENER	
D3013	MAZ31100ML	DIODE, ZENER	
D3014	MAZ31100ML	DIODE, ZENER	
D3015	MAZ31100ML	DIODE, ZENER	
D3016	MAZ31100ML	DIODE, ZENER	
D3017	MAZ31100ML	DIODE, ZENER	
D3018	MAZ31100ML	DIODE, ZENER	
D3019	MAZ31100ML	DIODE, ZENER	
D3020	MAZ31100ML	DIODE, ZENER	
D3021	MAZ31100ML	DIODE, ZENER	
D3022	MAZ31100ML	DIODE, ZENER	
D3023	MAZ31100ML	DIODE, ZENER	
D3024	MAZ31100ML	DIODE, ZENER	
D3025	MAZ31100ML	DIODE, ZENER	
D3026	MAZ31100ML	DIODE, ZENER	
D3027	MAZ31100ML	DIODE, ZENER	
D3028	MAZ31100ML	DIODE, ZENER	
D3029	MAZ31100ML	DIODE, ZENER	
D3030	MAZ31100ML	DIODE, ZENER	
D3031	MAZ31100ML	DIODE, ZENER	
D3032	MAZ31100ML	DIODE, ZENER	
D3033	MAZ31100ML	DIODE, ZENER	
D3034	MAZ31100ML	DIODE, ZENER	
D3035	MAZ31100ML	DIODE, ZENER	
D3036	MAZ31100ML	DIODE, ZENER	
D3037	MAZ31100ML	DIODE, ZENER	
D3038	MAZ31100ML	DIODE, ZENER	
D3039	MAZ31100ML	DIODE, ZENER	
D3151	MAZ31100ML	DIODE, ZENER	
D3152	MAZ31100ML	DIODE, ZENER	
D3153	MAZ31100ML	DIODE, ZENER	
D3154	MAZ31100ML	DIODE, ZENER	
D3155	MAZ31100ML	DIODE, ZENER	
D3156	MAZ31100ML	DIODE, ZENER	
D3159	MAZ31100ML	DIODE, ZENER	
D3160	MAZ31100ML	DIODE, ZENER	
D3801	MAZ41200MF	DIODE, ZENER	
D3802	MAZ41200MF	DIODE, ZENER	
D3803	MAZ41200MF	DIODE, ZENER	
D3804	D1NL40V70	DIODE	
D3805	D1NL40V70	DIODE	
D3806	D1NL40V70	DIODE	
D3807	D1NL40V70	DIODE	
D3808	D1NL40V70	DIODE	
D3809	D1NL40V70	DIODE	
D3811	D4EAB3610002	DIODE	
		FUSES	
F801	XBA2A00101	FUSE 6.3A 125V	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
INTEGRATED CIRCUITS			
IC432	C0ABBA000073	INT. CKT.	
IC433	C0ABBA000073	INT. CKT.	
IC451	LA7876N	INT CKT	
IC500	C0AABB000107	INT. CKT.	
IC511	C0BBBA000043	INT CKT	
IC751	C0BBBA000043	INT CKT	
IC752	C0ZBZ0000373	INT. CKT.	
IC801	AN8029	INT CKT	⚠
IC802	C0EAS0000024	INT. CKT.	⚠
IC804	B0EBKM000016	DIODE, RECTIFIER	
IC811	PC123FY2	INT CKT	⚠
IC871	C0DACMG00001	INT CKT	
IC872	C0DACMG00001	INT CKT	
IC875	C0DACMG00001	INT CKT	
IC876	PQ120RDA1MZH	INT CKT	
IC901	C5AA00000195	INT CKT	
IC1004	TVR2AJ188S	EEPROM	
IC1501	C0ABBA000073	INT. CKT.	
IC2201	AN5849S-E1V	INT CKT	
IC2301	TDA8925J	AUDIO AMP IC	
IC2303	C0BBBA000043	INT CKT	
IC2304	C0ABBA000073	INT. CKT.	
IC2304	PC123FY2	INT CKT	
IC2451	NJW1137MPTE1	INT CKT	
IC3002	AN15852A-VT	INT CKT	
IC3003	C1AB00000460	INT. CKT.	
IC3801	C1AA00000648	INT CKT (VIDEO OUTPUT AMP)	
IC3802	C1AA00000648	INT CKT (VIDEO OUTPUT AMP)	
IC3803	C1AA00000648	INT CKT (VIDEO OUTPUT AMP)	
IC4803	AN15530B	INT CKT	
IC4904	C0AABB000107	INT. CKT.	
IC4905	BD3869AF-E2	INT CKT	
COILS			
L009	ELELN330KA	DIODE	
L401	EXCELSA39V	EMI BEAD CORE	
L431	ELESN101KA	COIL, 100UH	
L432	EXCELDR25V	FERRITE BEAD	
L500	TALL08TR56MA	COIL	
L503	TALL13N103JB	COIL	
L506	EXCELSA24T	FERRITE BEAD	
L551	ELH5L7720	COIL	⚠
L553	ELH5L8110	COIL	⚠
L711	ELESN100KA	COIL, PEAKING 10UH	
L751	ELC18B151G	FILTER	
L752	TALFP15B152K	COIL	
L759	EXCELSA35T	FERRITE BEAD	
L801	G0B650H00002	COIL	⚠
L802	HF2836622Y3R	LINE FILTER	⚠
L803	HF2836622Y3R	LINE FILTER	⚠
L804	G0B650H00002	COIL	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
L807	EXCELDR35V	FERRITE BEAD	
L812	EXCELSA35B	FERRITE BEAD	
L814	TALL08T101KA	LINE FILTER	
L815	EXCELSA39E	FERRITE BEAD	
L816	EXCELSA39E	FERRITE BEAD	
L819	EXCELSA24T	FERRITE BEAD	
L820	EXCELSA24T	FERRITE BEAD	
L821	EXCELDR35V	FERRITE BEAD	
L824	EXCELDR35V	FERRITE BEAD	
L825	G0A151D00002	COIL	
L826	TLUADTB820K	COIL	
L827	TALL08T470KA	COIL	
L829	EXCELDR35V	FERRITE BEAD	
L850	ELESN101JA	COIL	
L875	G0A151ZA0004	COIL	
L876	ELC12E151L	CHOKE COIL,150UH	
L878	G0A331ZA0041	CHOKE COIL, 330U	
L890	EXCELDR35V	FERRITE BEAD	
L891	G0A101E00003	COIL	
L893	EXCELSA39V	EMI BEAD CORE	
L904	G0B800H00001	COIL	
L1501	TALFP15B222K	COIL	
L2201	ELESN100JA	COIL, PEAKING 10UH	
L2304	G0A151ZA0041	CHOKE COIL, 150U	
L2305	G0A151ZA0041	CHOKE COIL, 150U	
L2306	EXCELSA35V	EMI BEAD CORE	
L2307	EXCELSA35V	EMI BEAD CORE	
L3001	EXCELSA35T	FERRITE BEAD	
L3002	EXCELSA24T	FERRITE BEAD	
L3008	ELJPA100KF	CHIP INDUCTOR, 10UH	
L3010	ELJPA100KF	CHIP INDUCTOR, 10UH	
L3012	ELJPA2R2MF	CHIP INDUCTOR, 2.2UH	
L3013	ELJPA100KF	CHIP INDUCTOR, 10UH	
L3804	TALV35VB1R0J	COIL	
L3805	TALV35VB1R0J	COIL	
L3806	TALV35VB1R0J	COIL	
L3807	EXCELSA24T	FERRITE BEAD	
TRANSISTORS			
Q404	2SD601ASTX	TRANSISTOR	
Q405	2SA1309ATA	TRANSISTOR	
Q406	2SD601ARTX	TRANSISTOR	
Q501	B1CEML000001	TRANSISTOR	
Q502	2SK2847LBMAT	TRANSISTOR	
Q503	2SD601ARTX	TRANSISTOR	
Q509	2SC1473QR	TRANSISTOR	
Q510	2SC1473QR	TRANSISTOR	
Q512	2SC1685QRSTA	TRANSISTOR	
Q513	2SD601ARTX	TRANSISTOR	
Q551	B1BAJW000001	TRANSISTOR	
Q562	2SC1473QRTA	TRANSISTOR	
Q751	2SK2538000LB	TRANSISTOR	
Q752	2SD601ARTX	TRANSISTOR	
Q754	2SD601ARTX	TRANSISTOR	
Q755	B1DEGG000010	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q801	2SK2917LB	TRANSISTOR	⚠
Q802	2SC1685QRSTA	TRANSISTOR	
Q803	2SC1685QRSTA	TRANSISTOR	
Q804	2SA1309ATA	TRANSISTOR	
Q805	2SC1685QRSTA	TRANSISTOR	
Q806	2SC1685QRSTA	TRANSISTOR	
Q807	2SC1318STA	TRANSISTOR	
Q808	2SC1685QRSTA	TRANSISTOR	
Q854	2SA19610QAHW	TRANSISTOR	
Q860	2SD601ARTX	TRANSISTOR	
Q861	2SD601ARTX	TRANSISTOR	
Q862	2SD601ARTX	TRANSISTOR	
Q863	2SD601ARTX	TRANSISTOR	
Q880	2SB709ARTX	TRANSISTOR	
Q1501	B1DEDR000005	TRANSISTOR	
Q1502	B1DEDR000005	TRANSISTOR	
Q1503	B1BAAT000001	TRANSISTOR	
Q1504	2SC1685QRSTA	TRANSISTOR	
Q1505	2SC1685QRSTA	TRANSISTOR	
Q1506	2SD601ARTX	TRANSISTOR	
Q2301	2SD601ARTX	TRANSISTOR	
Q2302	2SD601ARTX	TRANSISTOR	
Q2303	2SB709ARTX	TRANSISTOR	
Q2304	2SD601ARTX	TRANSISTOR	
Q2307	2SB709ARTX	TRANSISTOR	
Q2308	2SD601ARTX	TRANSISTOR	
Q2310	2SB709ARTX	TRANSISTOR	
Q2311	2SB709ARTX	TRANSISTOR	
Q2312	2SD601ARTX	TRANSISTOR	
Q2313	2SD601ARTX	TRANSISTOR	
Q2314	2SB709ARTX	TRANSISTOR	
Q2314	2SD601ARTX	TRANSISTOR	
Q2316	2SB709ARTX	TRANSISTOR	
Q2317	2SD601ARTX	TRANSISTOR	
Q2318	2SD601ARTX	TRANSISTOR	
Q2319	2SD601ARTX	TRANSISTOR	
Q2451	2SD601ARTX	TRANSISTOR	
Q2452	2SD601ARTX	TRANSISTOR	
Q3026	2SB709ARTX	TRANSISTOR	
Q3157	2SD601ARTX	TRANSISTOR	
Q3158	2SD601ARTX	TRANSISTOR	
Q4901	2SD601ARTX	TRANSISTOR	
RELAYS			
RL451	TSE10814	RELAY	
RL801	K6B1AGA00043	RELAY	⚠
RL802	TSE10814	RELAY	⚠
RL803	K6B1AGA00042	RELAY	⚠
RL804	K6B1CGA00075	RELAY	⚠
RESISTORS			
R050	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R051	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R081	ERDS2TJ220T	RES,C 22-J-1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R407	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R408	ERDS2TJ272T	RES,C 2.7K-J-1/4W	
R409	ERJ6GEYJ563V	RES,M 56K-J-1/10W	
R410	ERJ6GEYJ224V	RES,M 220K-J-1/10W	
R411	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W	
R412	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R413	ERDS2TJ104T	RES,C 100K-J-1/4W	
R414	ERX1SJR82P	RES,M .82-J-1/2W	
R415	ERG3FJ331H	RES,M 330-J-3W	
R417	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W	
R418	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R419	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R420	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W	
R421	ERJ6ENF1602V	RES,M 16K-F-1/4W	
R422	ERJ6ENF2001V	RES,M 2K-F-1/10W	
R423	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R424	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R425	ERDS1FJ1R0P	RES,C 1.0-J-1/2W	
R426	ERJ6GEYJ123V	RES,M 12K-J-1/10W	
R427	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R428	EROS2THF9761	RES,M 9.76k-f-1/4w	
R429	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W	
R430	EROS2THF1500	RES,M 150-F-1/4W	
R431	EROS2THF2000	RES,M 200-f-1/4w	
R434	ERX12SJ1R8P	RES,M 1.8-J-1/2W	
R435	ERX12SJ2R2P	RES,M 2.2-J-1/2W	
R436	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R440	ERG1SJ102P	RES,M 1K-J-1W	
R441	ERX1SJ1R0P	RES,M 1.0-J-1W	
R444	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R445	ERX1SJ1R0P	RES,M 1.0-J-1W	
R447	ERJ6ENF6800V	RES,M 680-F-1/10W	
R449	ERJ6ENF3901V	RES,M 3.9K-F-1/10W	
R464	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R465	ERJ6ENF2201V	RES,M 2.2K-F-1/10W	
R470	ERJ6GEYJ683V	RES,M 68K-J-1/10W	
R471	ERJ6ENF1003V	RES,M 100K-F-1/10W	
R472	ERJ6ENF2002V	RES,M 20K-F-1/10W	
R476	ERJ6GEYJ823V	RES,M 82K-J-1/10W	
R479	ERJ6GEYJ821V	RES,M 820-J-1/10W	
R481	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R495	ERJ6ENF2203V	RES,M 220K-F-1/10W	
R501	ERDS2TJ104T	RES,C 100K-J-1/4W	
R502	ERDS2TJ680T	RES,C 68-J-1/4W	
R503	ERG3FJ181H	RES,M 180-J-3W	
R504	ERG1SJ102P	RES,M 1K-J-1W	
R505	ERG1SJ100P	RES,M 10-J-1W	
R510	ERG2FJ331H	RES,M 330-J-2W	
R512	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R513	ERC12GK103D	RES,C 10K-K-1/2W	
R514	EROS2THF3242	RES,M 32.4k-f-1/4w	
R515	EROS2THF3242	RES,M 32.4k-f-1/4w	
R516	ERDS2TJ101T	RES,C 100-J-1/4W	
R517	ERC14GK103V	RES,M 10K-J-1W	

Ref. No.	Part No.	Part Name & Description	Remarks
R518	**ERDS1FJ1R5T**	**RES,C 1.5-J-1/2W**	⚠
R520	**ERQ14AJ2R2E**	**RES,F 2.2-J-1/4W**	⚠
R521	**ERJ6ENF6041V**	**RES,M 6.04K-F-1/10W**	⚠
R522	**ERJ6ENF2401V**	**RES,M 2.4K-F-1/10W**	⚠
R524	**EVMEAGA00B14**	**CONTROL 10K**	
R525	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R526	**ERQ12HJ1R0P**	**RES,F 1.0-J-1/2W**	
R527	**ERDS2TJ472T**	**RES,C 4.7K-J-1/4W**	
R528	**ERQ1CJP120S**	**RES,F 12-J-1W**	
R529	**ERDS2TJ273T**	**RES,C 27K-J-1/4W**	
R530	**ERDS2TJ123T**	**RES,C 12K-J-1/4W**	
R531	**ERDS2TJ221T**	**RES,C 220-J-1/4W**	
R532	**ERDS1FJ1R0P**	**RES,C 1.0-J-1/2W**	⚠
R533	**ERDS1FJ1R0P**	**RES,C 1.0-J-1/2W**	⚠
R534	**EROS2THF9102**	**RES,M 91k-f-1/4w**	
R535	**ERJ6GEYJ562V**	**RES,M 5.6K-J-1/10W**	
R536	**ERDS2TJ101T**	**RES,C 100-J-1/4W**	
R538	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R540	**ERJ6GEYJ272V**	**RES,M 2.7K-J-1/10W**	
R541	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R550	**EROS2THF5361**	**RES,M 5.36k-f-1/4w**	
R560	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R561	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R562	**ERJ6GEYJ104V**	**RES,M 100K-J-1/10W**	
R586	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R587	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R588	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R589	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R595	**ERDS2TJ273T**	**RES,C 27K-J-1/4W**	
R701	**ERJ6GEYJ153V**	**RES,M 15K-J-1/10W**	
R702	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R703	**ERJ6GEYJ101V**	**RES,M 100-J-1/10W**	
R704	**ERJ6GEYJ202V**	**RES,M 2K-J-1/10W**	
R705	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R706	**ERJ6GEYJ152V**	**RES,M 1.5K-J-1/10W**	
R707	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R708	**ERJ6GEYJ183V**	**RES,M 18K-J-1/10W**	
R709	**ERDS1FJ680T**	**RES,C 68-J-1/2W**	
R711	**ERJ6GEYJ682V**	**RES,M 6.8K-J-1/10W**	
R712	**ERJ6GEYJ162V**	**RES,M 1.6K-J-1/10W**	
R714	**ERJ6GEYJ473V**	**RES,M 47K-J-1/10W**	
R715	**ERJ6GEYJ751V**	**RES,M 750-J-1/10W**	
R717	**ERF5AK4R7H**	**RES,W 4.7-K-5W**	
R718	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R720	**ERJ6GEYJ152V**	**RES,M 1.5K-J-1/10W**	
R787	**ERQ14AJ220P**	**RES,F 22-J-1/4W**	
R788	**ERDS2TJ473T**	**RES,C 47K-J-1/4W**	
R800	**ERU5TCK1R5T**	**RES,F 1.5-K-5W**	⚠
R801	**ERC14GK824D**	**RES,C 820K-K-1/4W**	
R802	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R803	**ERDS2TJ680T**	**RES,C 68-J-1/4W**	
R804	**ERDS2TJ331T**	**RES,C 330-J-1/4W**	

Ref. No.	Part No.	Part Name & Description	Remarks
R805	ERG2FJ121H	RES,M 120-J-2W	
R806	ERDS2TJ473T	RES,C 47K-J-1/4W	
R807	ERDS2TJ820T	RES,C 82-J-1/4W	
R808	ERDS2TJ680T	RES,C 68-J-1/4W	
R809	ERDS2TJ472T	RES,C 4.7K-J-1/4W	
R810	ERDS2TJ473T	RES,C 47K-J-1/4W	
R811	ERDS2TJ472T	RES,C 4.7K-J-1/4W	
R812	ERDS2TJ473T	RES,C 47K-J-1/4W	
R813	ERDS1FJ152T	RES,C 1.5K-J-1/2W	
R814	ERG3FJ223	RES,M 22K-J-3W	
R815	ERDS2TJ331T	RES,C 330-J-1/4W	
R816	ERDS2TJ471T	RES,C 470-J-1/4W	
R817	EROS2THF1371	RES,M 1.37K-F-1/4W	
R818	ERDS2TJ220T	RES,C 22-J-1/4W	
R819	ERDS1FJ820T	RES,C 82-J-1/2W	
R820	ERDS1FJ120T	RES, C 12-J-1/2W	
R821	ERX12SJ1R8P	RES,M 1.8-J-1/2W	
R822	ERX12SJ1R8P	RES,M 1.8-J-1/2W	
R823	ERDS2TJ102T	RES,C 1K-J-1/4W	
R824	ERDS2TJ153T	RES,C 15K-J-1/4W	
R825	ERDS2TJ104T	RES,C 100K-J-1/4W	
R826	ERDS2TJ103T	RES,C 10K-J-1/4W	
R828	ERDS2TJ103T	RES,C 10K-J-1/4W	
R829	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R830	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W	
R831	ERDS2TJ332T	RES,C 3.3K-J-1/4W	
R832	ERD75TAJ825	RES,C 8.2MEG-J-3/4W	⚠
R833	ERDS2TJ104T	RES,C 100K-J-1/4W	
R834	ERDS2TJ104T	RES,C 100K-J-1/4W	
R835	ERDS2TJ101T	RES,C 100-J-1/4W	
R836	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R837	ERDS2TJ222T	RES,C 2.2K-J-1/4W	
R838	ERDS1FJ330T	RES,C 30-J-1/2W	
R839	ERDS2TJ222T	RES,C 2.2K-J-1/4W	
R840	ERDS2TJ470T	RES,C 47-J-1/4W	
R841	ERDS2TJ104T	RES,C 100K-J-1/4W	
R842	ERDS2TJ223T	RES,C 22K-J-1/4W	
R843	ERDS2TJ681T	RES,C 680-J-1/4W	
R844	ERDS2TJ104T	RES,C 100K-J-1/4W	
R845	ERDS2TJ332T	RES,C 3.3K-J-1/4W	
R846	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W	
R847	ERDS1FJ473T	RES,C 47K-J-1/2W	
R852	ERDS1FJ562T	RES,C 56K-J-1/2W	
R854	ERDS1TJ102T	RES,C 1K-J-1/2W	
R855	ERDS2TJ913T	RES,C 91K-J-1/4W	
R856	ERDS2TJ123T	RES,C 12K-J-1/4W	
R857	ERX1SJ1R0P	RES,M 1.0-J-1W	
R858	ERX1SJ1R0P	RES,M 1.0-J-1W	
R859	ERDS2TJ272T	RES,C 2.7K-J-1/4W	
R860	ERDS1FJ102T	RES,C 1K-J-1/2W	
R861	ERX12SJR22P	RES,M .22-J-1/2W	
R862	ERX12SJR22P	RES,M .22-J-1/2W	
R863	ERX12SJR22P	RES,M .22-J-1/2W	
R865	ERDS2TJ102T	RES,C 1K-J-1/4W	

[illegible]	[illegible]	[illegible]	

Ref. No.	Part No.	Part Name & Description	Remarks
R867	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R868	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R869	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R870	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R875	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R876	ERJ6GEYJ393V	RES,M 39K-J-1/10W	
R877	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R878	ERJ6GEYJ393V	RES,M 39K-J-1/10W	
R879	ERDS1FJ750T	RES,M 75-J-1/2W	
R888	ERJ6ENF1601V	RES,M 1.6K-F-1/10W	
R889	ERJ6ENF1501V	RES,M 1.5K-F-1/10W	
R890	ERJ6ENF1581V	RES,M 158-F-1/10W	
R891	ERJ6ENF5100V	RES,M 510-F-1/10W	
R892	ERJ6ENF7500V	RES,M 750-F-1/10W	
R893	ERJ6ENF4701V	RES,M 4.7K-F-1/10W	
R894	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R895	ERJ6GEYJ104V	RES,M 100K-J-1/10W	
R896	ERJ6GEYJ203V	RES,M 20K-J-1/10W	
R899	ERG1SJ273P	RES,M 27K-J-1W	
R901	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R902	ERJ6ENF56R0V	RES,M 56.0-F-1/10W	
R904	ERG3FJ221H	RES,M 220-J-3W	
R905	ERQ1CJP331S	RES,F 330-J-1W	
R1025	ERDS2TJ101T	RES,C 100-J-1/4W	
R1026	ERDS2TJ101T	RES,C 100-J-1/4W	
R1051	ERJ6ENF1002V	RES,M 10K-F-1/10W	
R1052	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W	
R1053	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W	
R1054	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W	
R1055	ERJ6GEYJ512V	RES,M 5.1K-J-1/10W	
R1056	ERJ6GEYJ912V	RES,M 9.1K-J-1/10W	
R1057	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R1058	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R1059	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R1060	ERJ6GEYJ470V	RES,M 47-J-1/10W	
R1061	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R1062	ERJ6GEYJ331V	RES,M 330-J-1/10W	
R1501	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R1503	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W	
R1504	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R1505	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R1506	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R1507	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R1508	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W	
R1514	ERJ6GEYJ331V	RES,M 330-J-1/10W	
R1515	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R1521	ERDS2TJ104T	RES,C 100K-J-1/4W	
R1522	ERDS2TJ104T	RES,C 100K-J-1/4W	
R1523	ERDS2TJ104T	RES,C 100K-J-1/4W	
R1525	ERJ6GEYJ122V	RES,M 1.2K-J-1/10W	
R1526	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R1527	ERC14GK334D	RES,C 330K-K-1/4W	
R1528	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R1529	ERG1SJ332P	RES,M 3300-J-1W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1530	ERG3FJ331H	RES,M 330-J-3W	
R1531	ERG3FJ681H	RES,M 680-J-3W	
R1532	ERC12GK104D	RES,C 100K-K-1/2W	
R1533	ERC12GK125D	RES,C 1200K-1/2W	
R1534	ERDS2TJ125T	RES,C 1.2M-J-1/4W	
R1535	ERJ6GEYJ203V	RES,M 20K-J-1/10W	
R1536	ERG2FJ123H	RES,M 12K-J-2W	
R1537	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R1538	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R1539	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R1540	ERJ6GEYJ560V	RES,M 56-J-1/10W	
R2203	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W	
R2206	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2207	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2221	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R2301	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W	
R2302	TCJ2VB1H472K	CAP,C 4700PF-K-50V	
R2303	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W	
R2304	TCJ2VB1H472K	CAP,C 4700PF-K-50V	
R2305	ERG1SJ220P	RES,M 22-J-1W	
R2306	ERG1SJ220P	RES,M 22-J-1W	
R2313	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2314	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2322	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2323	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2324	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2324	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R2325	ERDS2TJ333T	RES,C 33K-J-1/4W	
R2325	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2326	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2326	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R2327	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R2328	ERJ6GEYJ183V	RES,M 18K-J-1/10W	
R2328	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R2329	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2329	ERJ6GEYJ432V	RES,M 4.3K-J-1/10W	
R2330	ERJ6GEYJ223V	RES,M 22K-J-1/10W	
R2331	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R2332	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2332	ERJ6GEYJ392V	RES,M 3.9K-J-1/10W	
R2333	ERJ6GEYJ183V	RES,M 18K-J-1/10W	
R2333	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W	
R2334	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2335	ERJ6GEYJ271V	RES,M 270-J-1/10W	
R2336	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2337	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2337	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2338	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W	
R2339	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R2342	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2345	ERJ6GEYJ183V	RES,M 18K-J-1/10W	
R2346	ERJ6GEYJ432V	RES,M 4.3K-J-1/10W	
R2348	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R2349	ERJ6GEYJ103V	RES,M 10K-J-1/10W	

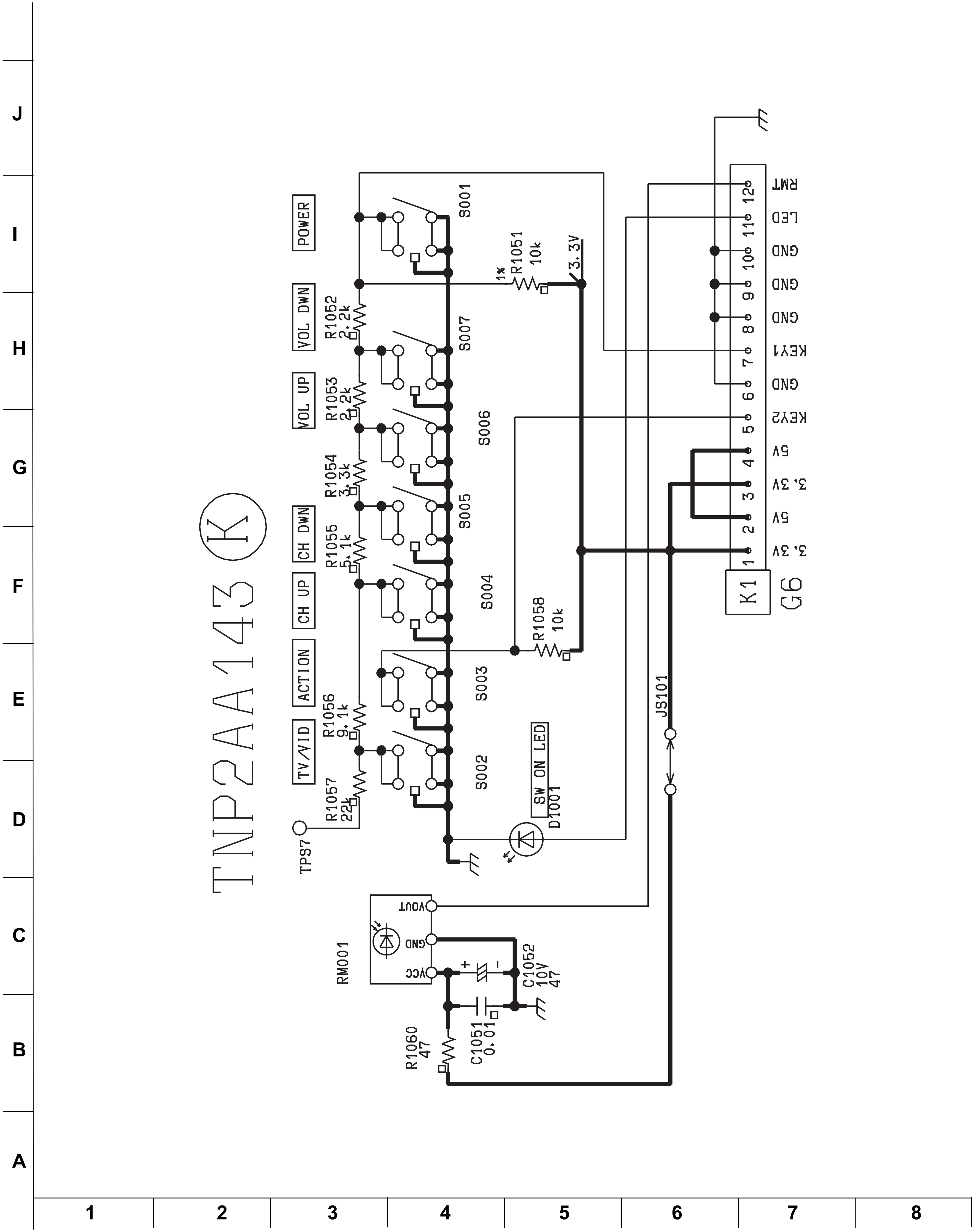
Ref. No.	Part No.	Part Name & Description	Remarks
R2351	**ERJ6GEYJ473V**	**RES,M 47K-J-1/10W**	
R2373	**ERJ6GEYJ153V**	**RES,M 15K-J-1/10W**	
R2378	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R2379	**ERJ6GEYJ682V**	**RES,M 5.6K-J-1/10W**	
R2380	**ERJ6GEYJ182V**	**RES,M 1.8K-J-1/10W**	
R2381	**ERJ6GEYJ154V**	**RES,M 150K-J-1/10W**	
R2382	**ERJ6ENF1001V**	**RES,M 1K-F-1/10W**	
R2383	**ERJ6GEYJ332V**	**RES,M 3.3K-J-1/10W**	
R2383	**ERJ6GEYJ392V**	**RES,M 3.9K-J-1/10W**	
R2384	**ERJ6GEYJ121V**	**RES,M 120-J-1/10W**	
R2385	**ERDS2TJ102T**	**RES,C 1K-J-1/4W**	
R2385	**ERJ6ENF2002V**	**RES,M 20K-F-1/10W**	
R2385	**ERJ6GEYJ223V**	**RES,M 22K-J-1/10W**	
R2386	**ERDS2TJ102T**	**RES,C 1K-J-1/4W**	
R2386	**ERJ6GEYJ182V**	**RES,M 1.8K-J-1/10W**	
R2387	**ERJ6GEYJ154V**	**RES,M 150K-J-1/10W**	
R2388	**ERJ6ENF1001V**	**RES,M 1K-F-1/10W**	
R2389	**ERJ6GEYJ332V**	**RES,M 3.3K-J-1/10W**	
R2389	**ERJ6GEYJ392V**	**RES,M 3.9K-J-1/10W**	
R2390	**ERJ6GEYJ121V**	**RES,M 120-J-1/10W**	
R2395	**ERJ6ENF2002V**	**RES,M 20K-F-1/10W**	
R2395	**ERJ6GEYJ223V**	**RES,M 22K-J-1/10W**	
R2396	**ERDS2TJ102T**	**RES,C 1K-J-1/4W**	
R2396	**ERDS2TJ182T**	**RES,C 1.8K-J-1/4W**	
R2398	**ERDS2TJ202T**	**RES,C 2K-J-1/4W**	
R2399	**ERDS2TJ202T**	**RES,C 2K-J-1/4W**	
R2400	**ERJ6GEYJ153V**	**RES,M 15K-J-1/10W**	
R2400	**ERJ6GEYJ203V**	**RES,M 20K-J-1/10W**	
R2401	**ERJ6GEYJ153V**	**RES,M 15K-J-1/10W**	
R2402	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	
R2402	**ERJ6GEYJ562V**	**RES,M 5.6K-J-1/10W**	
R2403	**ERDS2TJ202T**	**RES,C 2K-J-1/4W**	
R2405	**ERX1SJ5R6P**	**RES,M 5.6-J-1W**	
R2406	**ERJ6GEYJ393V**	**RES,M 39K-J-1/10W**	
R2407	**ERX1SJ5R6P**	**RES,M 5.6-J-1W**	
R2408	**ERJ6GEYJ393V**	**RES,M 39K-J-1/10W**	
R2451	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R2452	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R2453	**ERDS2TJ123T**	**RES,C 12K-J-1/4W**	
R2455	**ERDS2TJ123T**	**RES,C 12K-J-1/4W**	
R2460	**ERDS2TJ101T**	**RES,C 100-J-1/4W**	
R2461	**ERDS2TJ101T**	**RES,C 100-J-1/4W**	
R2463	**ERJ6GEYJ223V**	**RES,M 22K-J-1/10W**	
R2464	**ERJ6GEYJ102V**	**RES,M 1K-J-1/10W**	
R2464	**ERJ6GEYJ562V**	**RES,M 5.6K-J-1/10W**	
R2465	**ERJ6GEYJ223V**	**RES,M 22K-J-1/10W**	
R2466	**ERDS2TJ562T**	**RES,C 5.6K-J-1/4W**	
R2467	**ERDS2TJ222T**	**RES,C 2.2K-J-1/4W**	
R3001	**ERJ6GEYJ184V**	**RES,M 180K-J-1/10W**	
R3002	**ERJ6GEYJ184V**	**RES,M 180K-J-1/10W**	
R3005	**ERJ6GEYJ184V**	**RES,M 180K-J-1/10W**	
R3007	**ERJ6GEYJ184V**	**RES,M 180K-J-1/10W**	
R3011	**ERJ6ENF75R0V**	**RES,M 75.0-F-1/10W**	
R3014	**ERJ6GEYJ103V**	**RES,M 10K-J-1/10W**	

Ref. No.	Part No.	Part Name & Description	Remarks
R3015	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3016	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3017	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3020	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R3021	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3022	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3024	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3025	ERJ6GEYJ471V	RES,M 470-J-1/10W	
R3026	ERJ6GEYJ184V	RES,M 180K-J-1/10W	
R3027	ERJ6GEYJ681V	RES,M 680-J-1/10W	
R3028	ERJ6GEYJ681V	RES,M 680-J-1/10W	
R3029	ERJ6GEYJ681V	RES,M 680-J-1/10W	
R3030	ERJ6ENF68R0V	RES,M 68-F-1/10W	
R3082	ERJ6ENF2001V	RES,M 2K-F-1/10W	
R3083	ERJ6ENF2701V	RES,M 2.7K-F-1/10W	
R3084	ERJ6ENF2001V	RES,M 2K-F-1/10W	
R3085	ERJ6ENF2701V	RES,M 2.7K-F-1/10W	
R3093	ERJ6GEYJ220V	RES,M 22-J-1/10W	
R3100	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3101	ERDS2TJ221T	RES,C 220-J-1/4W	
R3102	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3103	ERDS2TJ221T	RES,C 220-J-1/4W	
R3104	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3105	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3106	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3107	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3108	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3109	ERDS2TJ221T	RES,C 220-J-1/4W	
R3110	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3111	ERDS2TJ221T	RES,C 220-J-1/4W	
R3112	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3113	ERDS2TJ221T	RES,C 220-J-1/4W	
R3114	ERDS2TJ221T	RES,C 220-J-1/4W	
R3115	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3116	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3117	ERDS2TJ221T	RES,C 220-J-1/4W	
R3118	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3119	ERDS2TJ221T	RES,C 220-J-1/4W	
R3120	ERDS2TJ221T	RES,C 220-J-1/4W	
R3121	ERJ6GEYJ820V	RES,M 82-J-1/10W	
R3122	ERJ6GEYJ820V	RES,M 82-J-1/10W	
R3123	ERJ6GEYJ820V	RES,M 82-J-1/10W	
R3124	ERJ6GEYJ820V	RES,M 82-J-1/10W	
R3125	ERJ6GEYJ820V	RES,M 82-J-1/10W	
R3126	ERDS2TJ221T	RES,C 220-J-1/4W	
R3127	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3128	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3130	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3131	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3132	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3133	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3134	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3135	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3136	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R3137	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3138	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3139	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3140	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3141	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3142	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3143	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R3152	ERJ6GEYJ224V	RES,M 220K-J-1/10W	
R3154	ERJ6GEYJ224V	RES,M 220K-J-1/10W	
R3157	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3158	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3160	ERJ6GEYJ220V	RES,M 22-J-1/10W	
R3161	ERJ6GEYJ220V	RES,M 22-J-1/10W	
R3162	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3163	ERDS2TJ102T	RES,C 1K-J-1/4W	
R3164	ERDS2TJ102T	RES,C 1K-J-1/4W	
R3165	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3166	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3167	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3168	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3170	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3172	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3173	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3177	ERDS2TJ331T	RES,C 330-J-1/4W	
R3178	ERDS2TJ331T	RES,C 330-J-1/4W	
R3182	ERJ6ENF1801V	RES,M 1.8K-F-1/10W	
R3183	ERJ6ENF2401V	RES,M 2.4K-F-1/10W	
R3184	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3185	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3186	ERJ6ENF1801V	RES,M 1.8K-F-1/10W	
R3187	ERJ6ENF2401V	RES,M 2.4K-F-1/10W	
R3188	ERJ6GEYJ221V	RES,M 220-J-1/10W	
R3189	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3190	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3191	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3192	ERJ6GEYJ102V	RES,M 1K-J-1/10W	
R3193	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3194	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3195	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3196	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3197	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3198	ERJ6ENF75R0V	RES,M 75.0-F-1/10W	
R3801	ERJ6ENF1000V	RES,M 100-F-1/10W	
R3802	ERJ6ENF1000V	RES,M 100-F-1/10W	
R3803	ERJ6ENF1000V	RES,M 100-F-1/10W	
R3804	ERDS2TJ101T	RES,C 100-J-1/4W	
R3805	ERDS2TJ101T	RES,C 100-J-1/4W	
R3806	ERDS2TJ101T	RES,C 100-J-1/4W	
R3807	ERC12GK821D	RES,C 820-K-1/2W	
R3808	ERC12GK821D	RES,C 820-K-1/2W	
R3809	ERC12GK821D	RES,C 820-K-1/2W	
R3810	ERDS2TJ102T	RES,C 1K-J-1/4W	
R3811	ERDS2TJ102T	RES,C 1K-J-1/4W	
R3812	ERDS2TJ102T	RES,C 1K-J-1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R4828	ERJ6GEYJ153V	RES,M 15K-J-1/10W	
R4868	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R4874	ERDS2TJ102T	RES,C 1K-J-1/4W	
R4875	ERJ6GEYJ104V	RES,M 100K-J-1/10W	
R4875	ERJ6GEYJ473V	RES,M 47K-J-1/10W	
R4876	ERG1SJ470P	RES,M 47-J-1W	
R4930	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R4931	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W	
R4932	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R4933	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W	
R4934	ERJ6GEYJ153V	RES,M 15K-J-1/10W	
R4935	ERJ6GEYJ153V	RES,M 15K-J-1/10W	
R4936	ERJ6GEYJ103V	RES,M 10K-J-1/10W	
R4938	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R4939	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R4942	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R4943	ERJ6GEYJ101V	RES,M 100-J-1/10W	
R4946	ERJ6ENF5602V	RES,M 56K-F-1/10W	
R4947	ERJ6ENF2001V	RES,M 2K-F-1/10W	
R4948	ERDS2TJ822T	RES,C 8.2K-J-1/4W	
R4949	ERDS2TJ102T	RES,C 1K-J-1/4W	
R4950	ERDS1FJ391T	RES,C 390-J-1/2W	
R4951	ERX12SJR47P	RES,M .47-J-1/2W	
R4952	ERX12SJR68P	RES,M .68-J-2W	
R4953	ERDS1FJ391T	RES,C 390-J-1/2W	
R5013	ERDS1FJ1R0T	RES,C 1.0-J-1/2W	
R519A	ERQ1CZKPR22S	RES,F .22-K-1W	⚠
SWITCHES			
S001	EVQPBD05R	SWITCH	
S002	EVQPBD05R	SWITCH	
S003	EVQPBD05R	SWITCH	
S004	EVQPBD05R	SWITCH	
S005	EVQPBD05R	SWITCH	
S006	EVQPBD05R	SWITCH	
S007	EVQPBD05R	SWITCH	
TRANSFORMERS			
T501	ETH19K204AZ	TRANSFORMER	
T551	TXFFT03JSER	TRANSFORMER	⚠
T801	ETS42AD4A5AD	TRANSFORMER	⚠
T802	ETP28KBZA1ZG	TRANSFORMER	⚠
T1501	ETF18L106A	TRANSFORMER	⚠
T2301	G0BYYYY00016	TRANSFORMER	
T3001	G0B250D00001	TRANSFORMER	
T3002	G0B250D00001	TRANSFORMER	
T3003	G0BYYYY00016	TRANSFORMER	
T3004	G0BYYYY00016	TRANSFORMER	
T3005	TF0402B04P03	TRANSFORMER	
T3023	G0BYYYY00016	TRANSFORMER	
T3025	TF0402B04P03	TRANSFORMER	
T3027	G0BYYYY00016	TRANSFORMER	
T4801	TF0402B04P03	TRANSFORMER	
OTHERS			

Ref. No.	Part No.	Part Name & Description	Remarks
TNR001	ENG36A16GF	TUNER	
1	M80LSW095X	CRT	⚠
2	TLY2AA024	DEFLECTION YOKE	⚠
M001	TXFYA010EEW	DAG GROUND	
3	TSP2AA027	DEGAUSSING COIL	⚠
4	TSP2AF007	ROTATION COIL	
5	TSP2AF009	GEOMAGNETIC COIL	
6	EASG18S502A2	SPEAKER	
M002	TXFKP15GSER	BRACKET SPEAKER	
7	TBX2AA0191	FUNCTION KEY BUTTON	
8	TKX2AA0181	IR GUIDE	
9	TKP2AA0741	LED PANEL	
M003	TSM2AA001	PERMALLOY MAGNET	
M004	TSN63115-4	PURITY MAGNET	
M005	TSX2AA0361	A.C. LINE CORD	⚠
10	TTP2AA0735S	CONTROL PANEL	
11	TXFKU03JSER	BACK CABINET	
12	TXFKY14JSER	FRONT CABINET	
13	TEK6935	DOOR CATCH	
14	TKP2AA0726	FRONT DOOR	
15	TMW2A97121	STRAIN RELIEF: AC LINE CORD	
JK3001	TJB2AA0251	REAR A/V 12P TERMINAL	
JK3002	TJB2AA0241	REAR A/V 10P TERMINAL	
JK3151	TJB2AA0371	FRONT A/V TERMINAL	
JK3804	K3B10CA00041	CONNECTOR	⚠
ACCESORIES			
M006	TQB2AA0501	OWNER'S MANUAL	
M007	EUR7613ZB0	REMOTE CONTROL	
M008	UR76EC0303E	BATTERY COVER REMOTE CTRL	
M009	EUR7613Z6A	REMOTE CONTROL	
M010	UR76EC0303D	BATTERY COVER REMOTE CTRL	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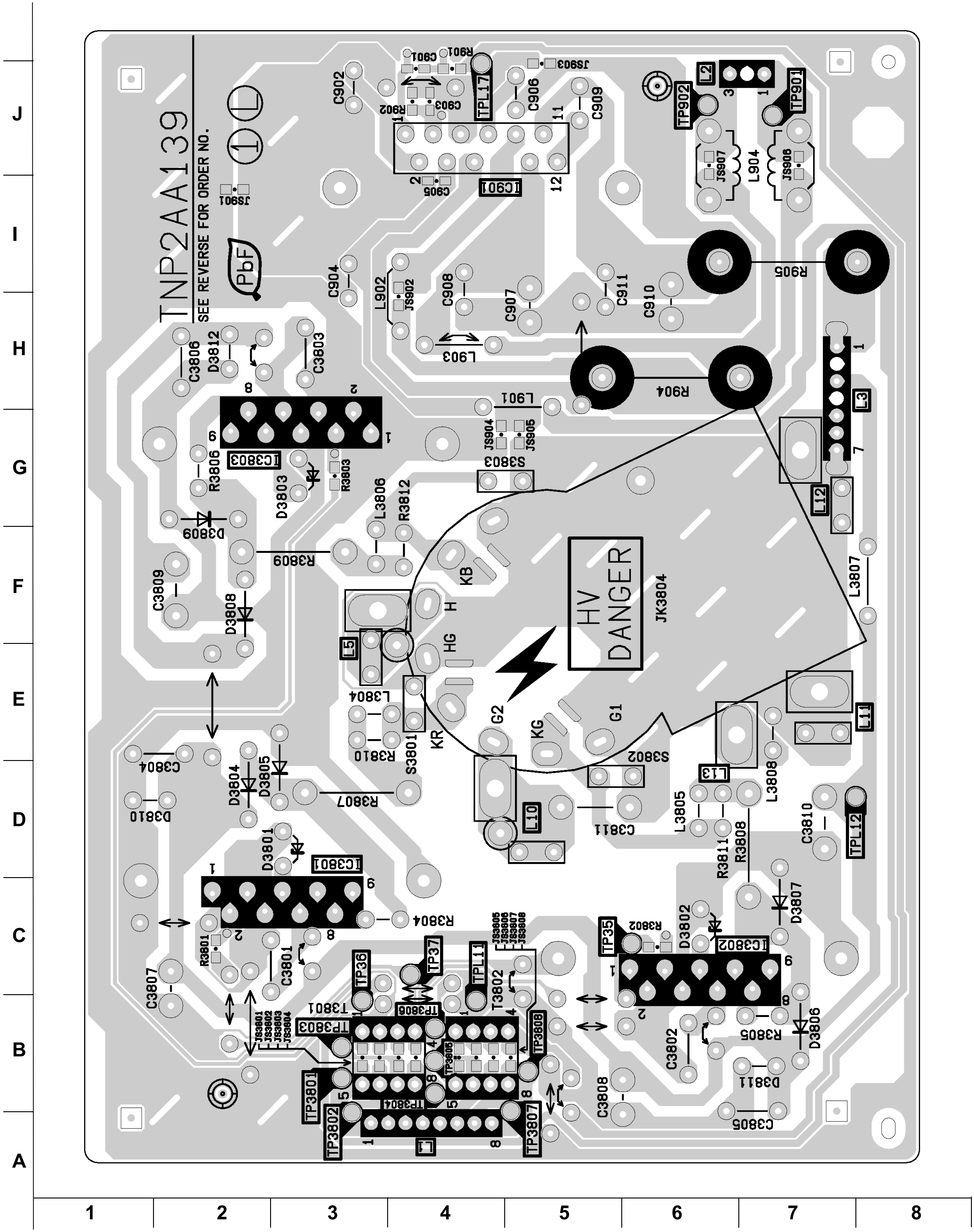
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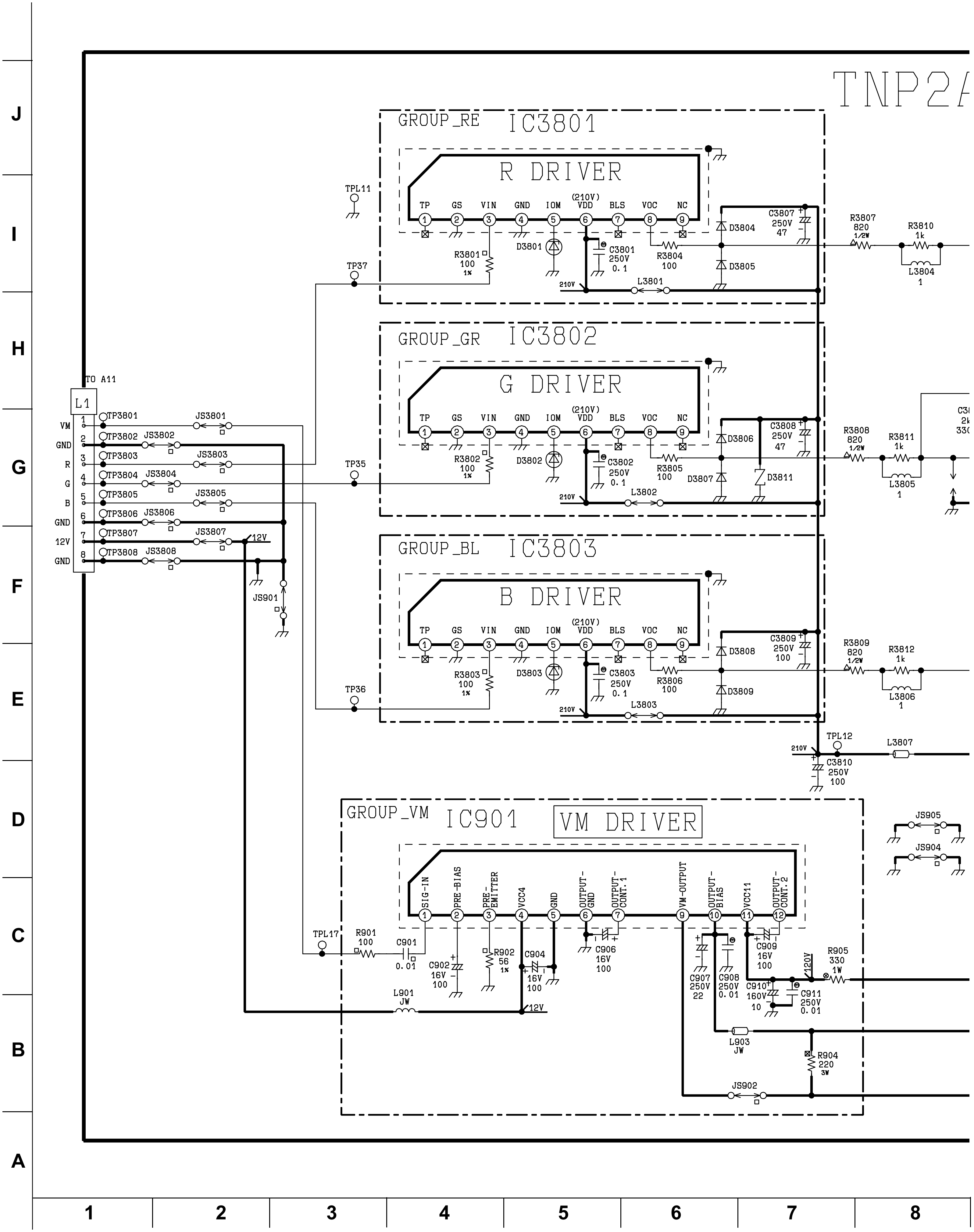
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GROUP_BL
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C3809 250V 100
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R3808 820 1/2W
R3809 820 1/2W
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R3811 1k
R3812 1k
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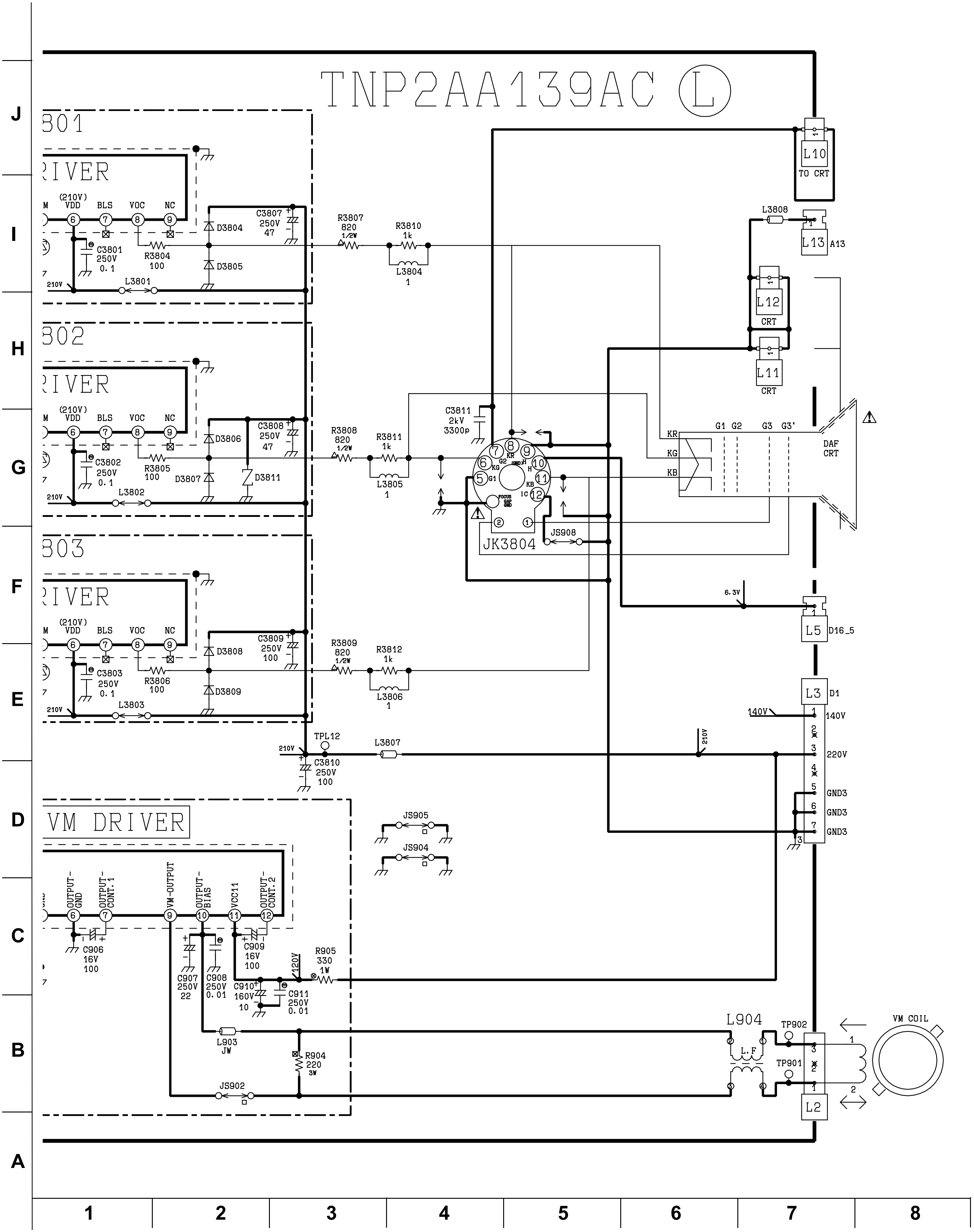
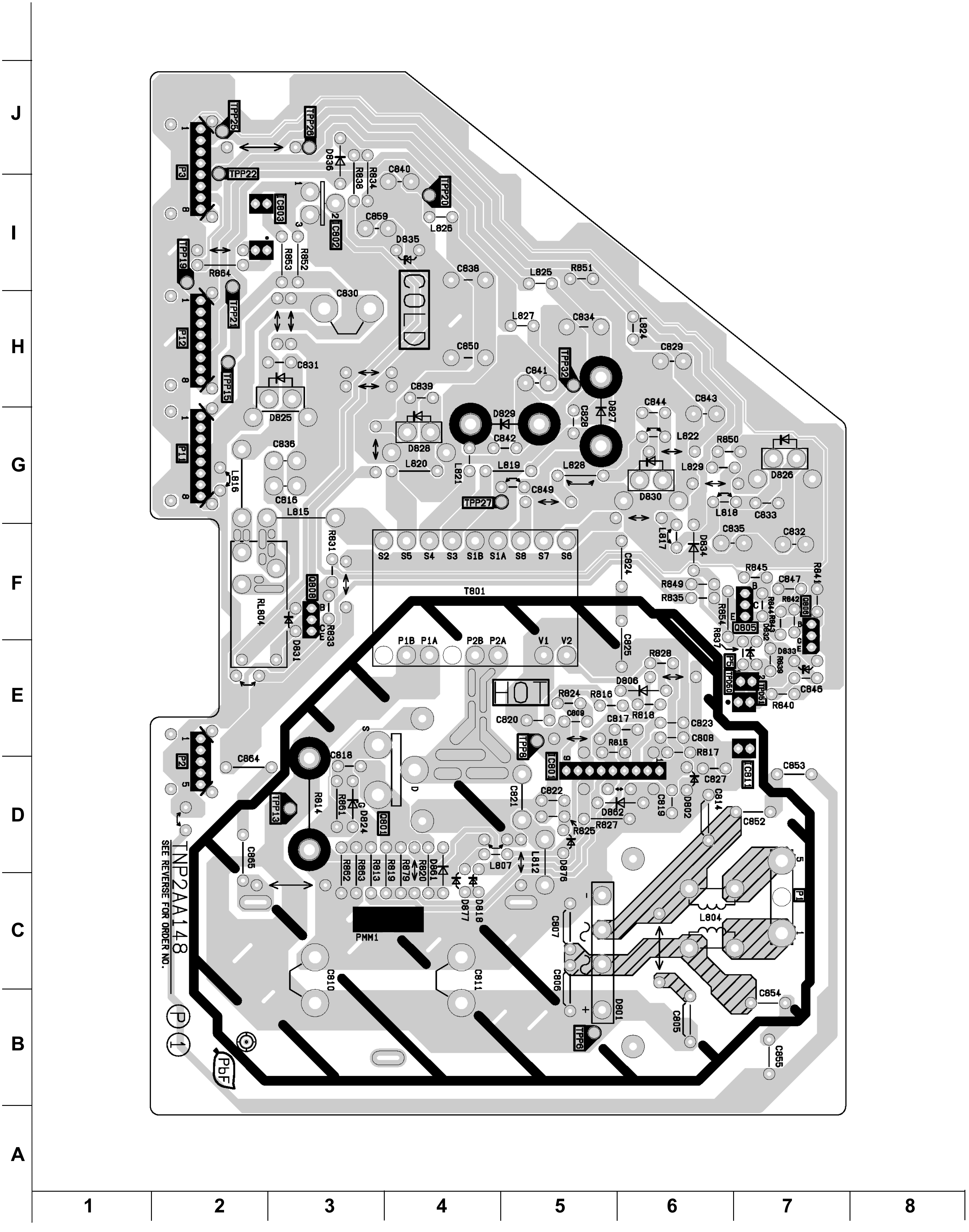
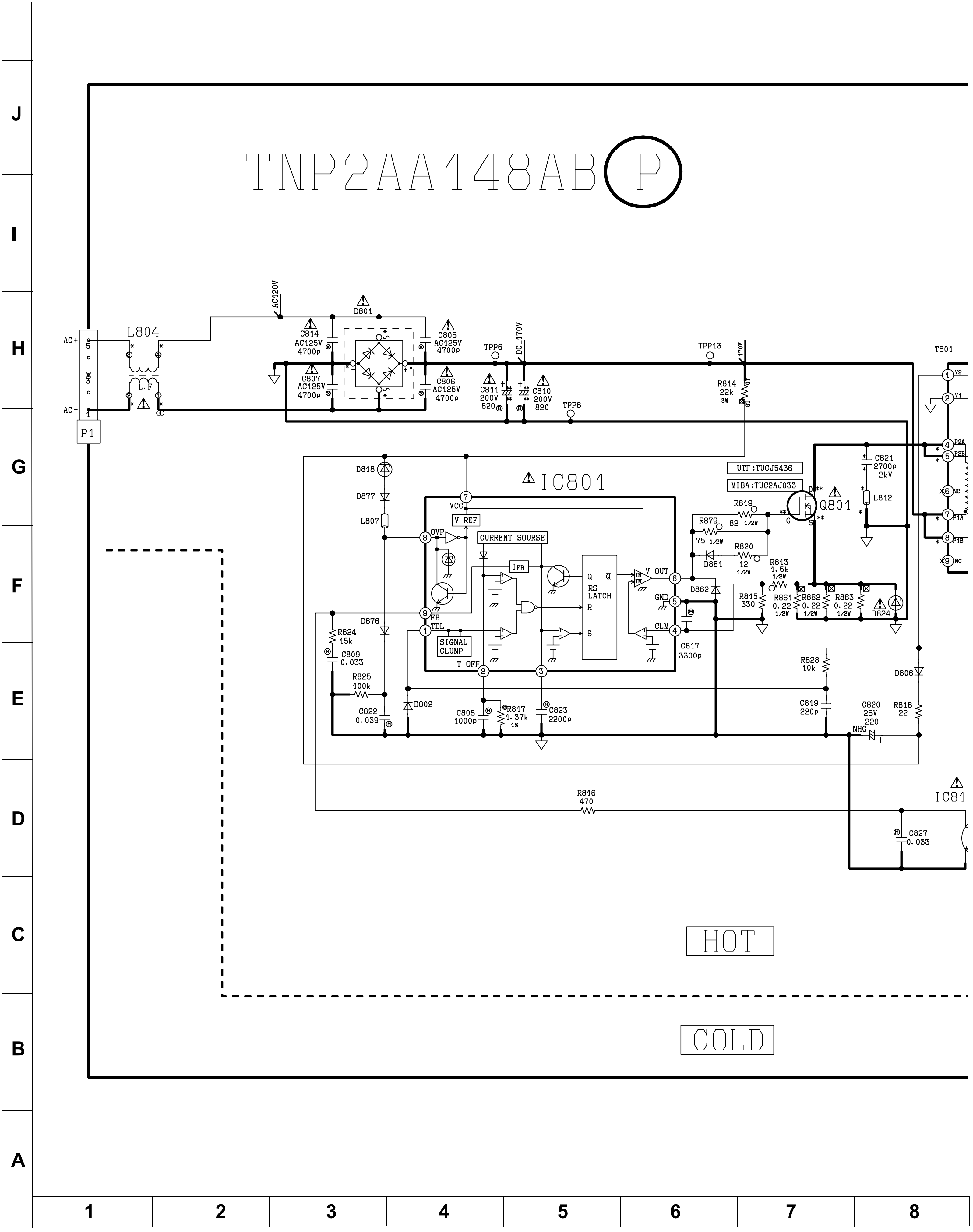
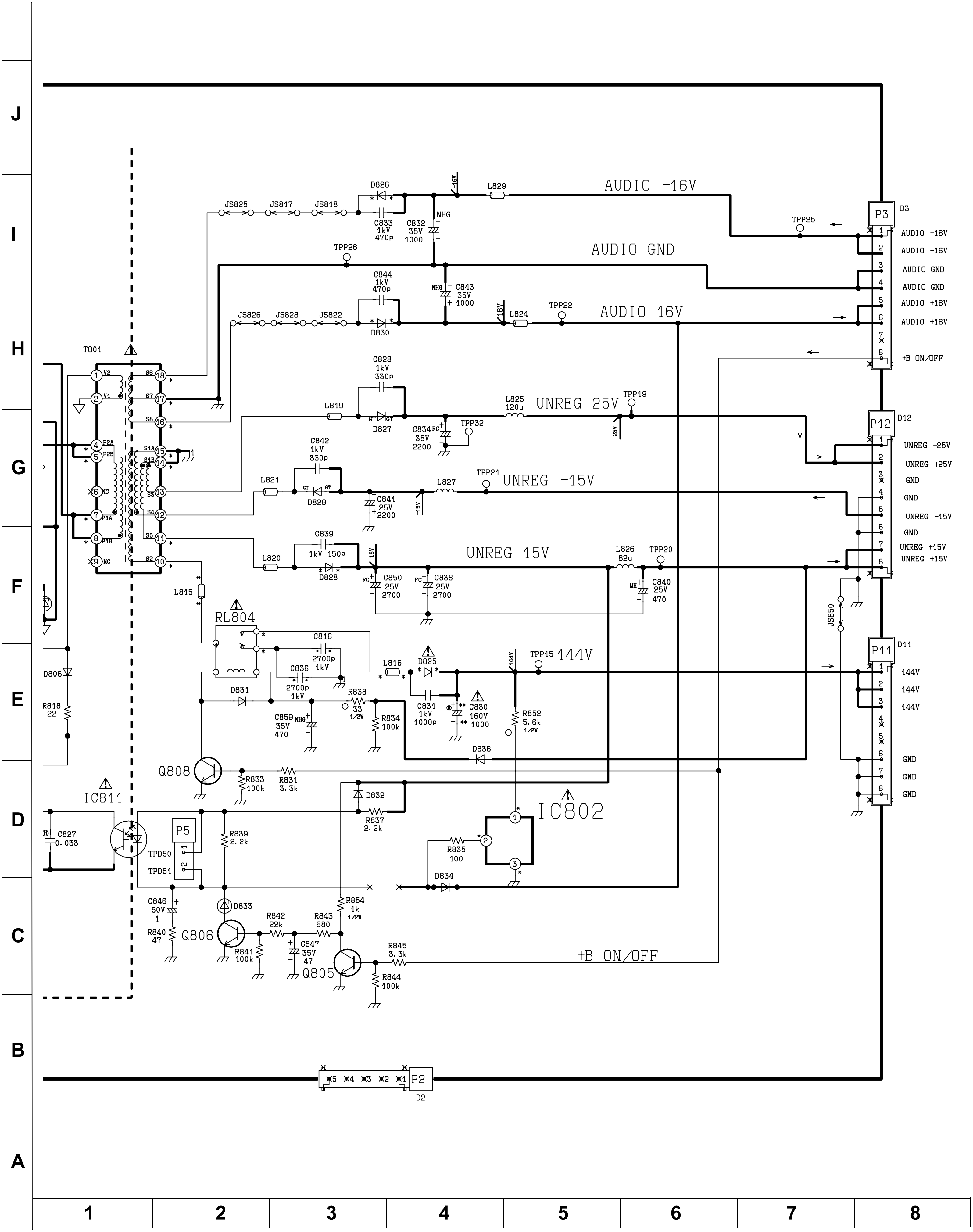
12V
GND
TP3801
TP3802
TP3803
TP3804
TP3805
TP3806
TP3807
TP3808
JS3801
JS3802
JS3803
JS3804
JS3805
JS3806
JS3807
JS3808
12V
JS901
TPL12
210V
L3807
C3810 250V 100
GROUP_VM
IC901
VM DRIVER
SIG-IN
PRE-BIAS
PRE-EMITTER
VCC4
GND
OUTPUT-GND
OUTPUT-CONT.1
VM-OUTPUT
OUTPUT-BIAS
VCC11
OUTPUT-CONT.2
TPL17
R901 100
C901 0.01
C902 16V 100
R902 56 1%
C904 16V 100
C906 16V 100
L901 JW
12V
C907 250V 22
C908 250V 0.01
C909 16V 100
C910 160V 10
C911 250V 0.01
120V
R905 330 1W
L903 JW
R904 220 3W
JS902
JS905
JS904

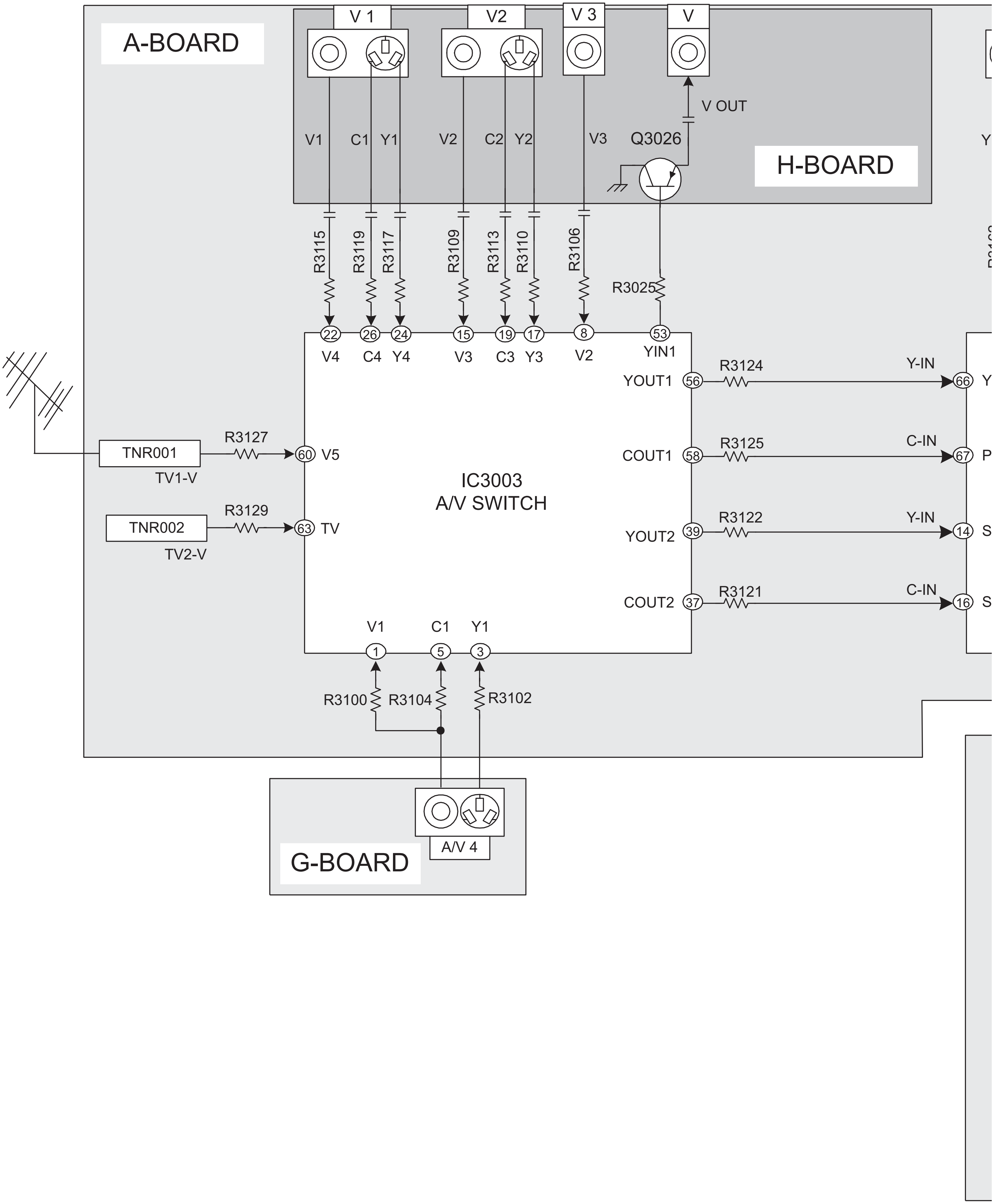

TNP2AA139AC (L)
301
RIVER
302
RIVER
303
RIVER
VM DRIVER
(210V)
VDD
BLS
VOC
NC
C3801 250V 0.1
C3802 250V 0.1
C3803 250V 0.1
R3804 100
R3805 100
R3806 100
L3801
L3802
L3803
210V
D3804
D3805
D3806
D3807
D3808
D3809
D3811
C3807 250V 47
C3808 250V 47
C3809 250V 100
R3807 820 1/2W
R3808 820 1/2W
R3809 820 1/2W
R3810 1k
R3811 1k
R3812 1k
L3804 1
L3805 1
L3806 1
C3811 2kV 3300p
JK3804
KR
KG
KB
G1
G2
H
IC
FOCUS GAP GND
JS908
G1 G2 G3 G3'
DAF CRT
L10 TO CRT
L3808
L13 A13
L12 CRT
L11 CRT
6.3V
L5 D16_5
L3 D1
140V
220V
GND3
TPL12
L3807
C3810 250V 100
JS905
JS904
OUTPUT-GND
OUTPUT-CONT.1
VM-OUTPUT
OUTPUT-BIAS
VCC11
OUTPUT-CONT.2
C906 16V 100
C907 250V 22
C908 250V 0.01
C909 16V 100
C910 160V 10
C911 250V 0.01
120V
R905 330 1W
L903 JW
R904 220 3W
JS902
L904
L.F
TP902
TP901
VM COIL
L2
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TPP25
TPP28
P3
TPP22
IC803
IC802
TPP20
D836
R838
R834
C840
C859
L826
D835
TPP19
R864
R853
R852
COLD
C838
L825
R851
TPP21
C830
P12
L827
C834
L824
C850
C829
TPP15
C831
C839
TPP32
C841
D827
P11
D825
D828
D829
C828
C844
C843
C836
C842
L822
R850
L816
L820
L821
L819
L828
D826
C816
L815
TPP27
C849
D830
L829
L818
C833
R831
T801
S2
S5
S4
S3
S1B
S1A
S8
S7
S6
L817
D834
C835
C832
Q808
C824
R845
C847
R841
RL804
R849
R835
R854
Q805
R844
R843
R842
Q806
D831
R833
P1B
P1A
P2B
P2A
V1
V2
C825
R837
D832
D833
R839
R828
P5
TPP60
TPP61
D806
HOT
R824
R816
R818
C846
R840
C809
C820
C817
C823
C808
R815
R817
TPP8
IC801
IC811
P2
C864
C818
C853
R814
C827
TPP13
R861
D824
Q801
C821
C822
D862
C819
D802
C814
C852
R825
R827
C865
R862
R863
R813
R819
R879
R820
D861
L807
L812
D876
D877
D818
L804
P1
C807
PMM1
C810
C811
C806
C854
D801
C805
TPP6
C855
TNP2AA148
SEE REVERSE FOR ORDER NO.
P1
PbF

P-BOARD TNP2AA148 CT-32HC14J/UJ

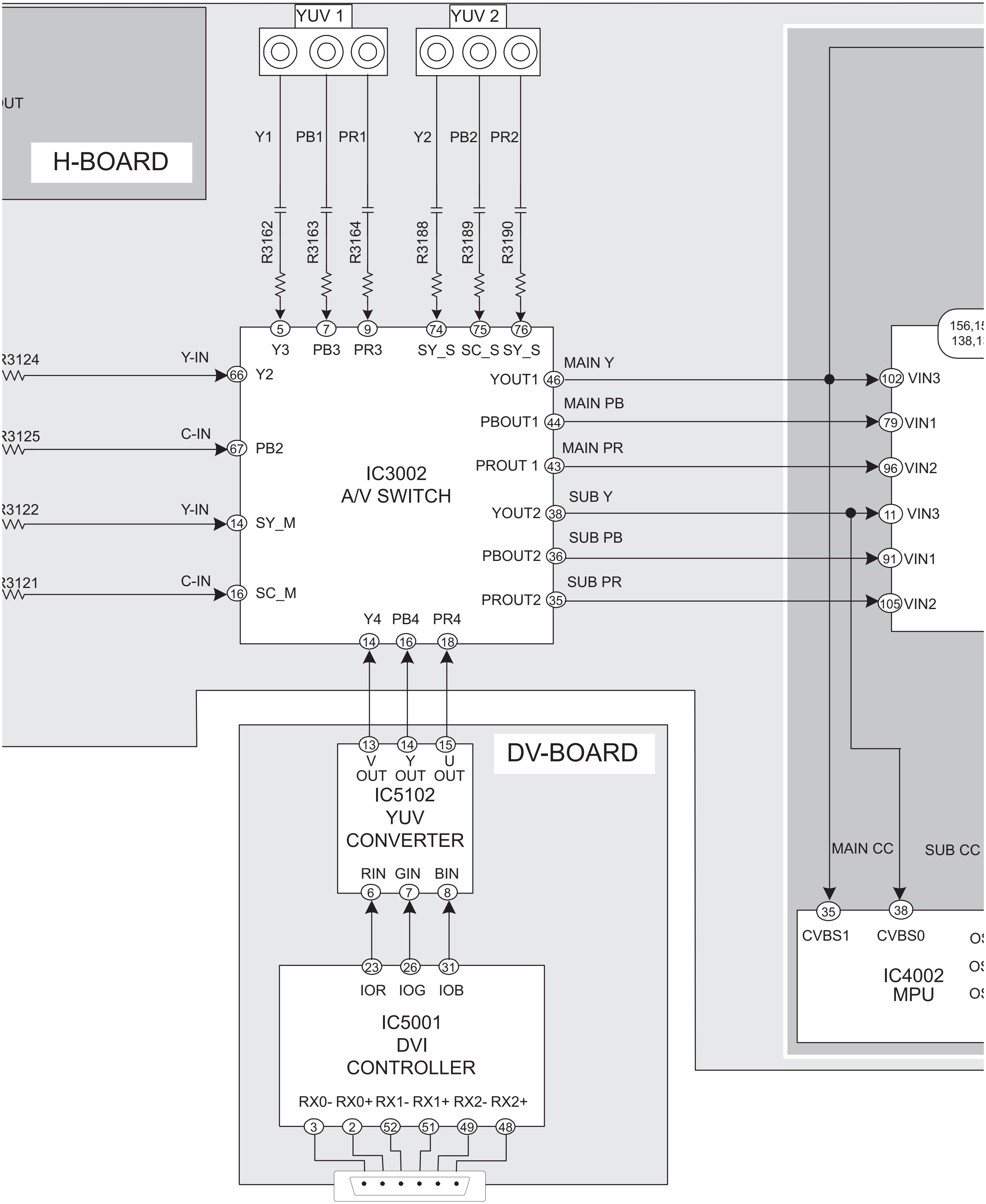

TNP2AA148AB
P
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
AC+
AC-
P1
L804
L.F
AC120V
D801
C814
AC125V
4700p
C807
AC125V
4700p
C805
AC125V
4700p
C806
AC125V
4700p
TPP6
DC_170V
C811
200V
820
C810
200V
820
TPP8
TPP13
170V
R814
22k
3W
T801
V2
V1
P2A
P2B
NC
P1A
P1B
C821
2700p
2kV
L812
UTF:TUCJ5436
MIBA:TUC2AJ033
Q801
R819
82 1/2W
R879
75 1/2W
R820
12
1/2W
D861
R813
1.5k
1/2W
D862
R815
330
R861
0.22
1/2W
R862
0.22
1/2W
R863
0.22
1/2W
D824
IC801
VCC
V REF
OVP
CURRENT SOURSE
IFB
RS
LATCH
Q
R
S
V OUT
GND
CLM
FB
TDL
SIGNAL
CLUMP
T OFF
D818
D877
L807
D876
R824
15k
C809
0.033
R825
100k
C822
0.039
D802
C808
1000p
R817
1.37k
1%
C823
2200p
C817
3300p
R828
10k
C819
220p
C820
25V
220
NHG
D806
R818
22
R816
470
IC81
C827
0.033
HOT
COLD


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
T801
V2
V1
P2A
P2B
NC
P1A
P1B
NC
S6
S7
S8
S1A
S1B
S3
S4
S5
S2
JS825
JS817
JS818
D826
C833 1kV 470p
C832 35V 1000
NHG
-16V
L829
AUDIO -16V
TPP25
P3
D3
AUDIO -16V
AUDIO -16V
AUDIO GND
AUDIO GND
AUDIO +16V
AUDIO +16V
+B ON/OFF
TPP26
AUDIO GND
C844 1kV 470p
C843 35V 1000
JS826
JS828
JS822
D830
16V
L824
TPP22
AUDIO 16V
C828 1kV 330p
L819
D827
GT
L825 120u
UNREG 25V
TPP19
C834 35V 2200
FC
TPP32
23V
P12
D12
UNREG +25V
UNREG +25V
GND
GND
UNREG -15V
GND
UNREG +15V
UNREG +15V
C842 1kV 330p
L821
D829
C841 25V 2200
-15V
L827
TPP21
UNREG -15V
C839 1kV 150p
L820
D828
15V
C850 25V 2700
C838 25V 2700
UNREG 15V
L826 82u
TPP20
C840 25V 470
MH
L815
RL804
C816 2700p 1kV
C836 2700p 1kV
L816
D825
144V
TPP15
144V
P11
D11
144V
144V
144V
GND
GND
GND
JS850
D806
R818 22
D831
C859 35V 470
R838 33 1/2W
R834 100k
C831 1kV 1000p
C830 160V 1000
R852 5.6k 1/2W
D836
Q808
R833 100k
R831 3.3k
IC811
D832
R837 2.2k
IC802
C827 0.033
P5
TPD50
TPD51
R839 2.2k
R835 100
D834
C846 50V 1
R840 47
Q806
D833
R841 100k
R842 22k
C847 35V 47
R843 680
R854 1k 1/2W
Q805
R845 3.3k
R844 100k
+B ON/OFF
P2
D2

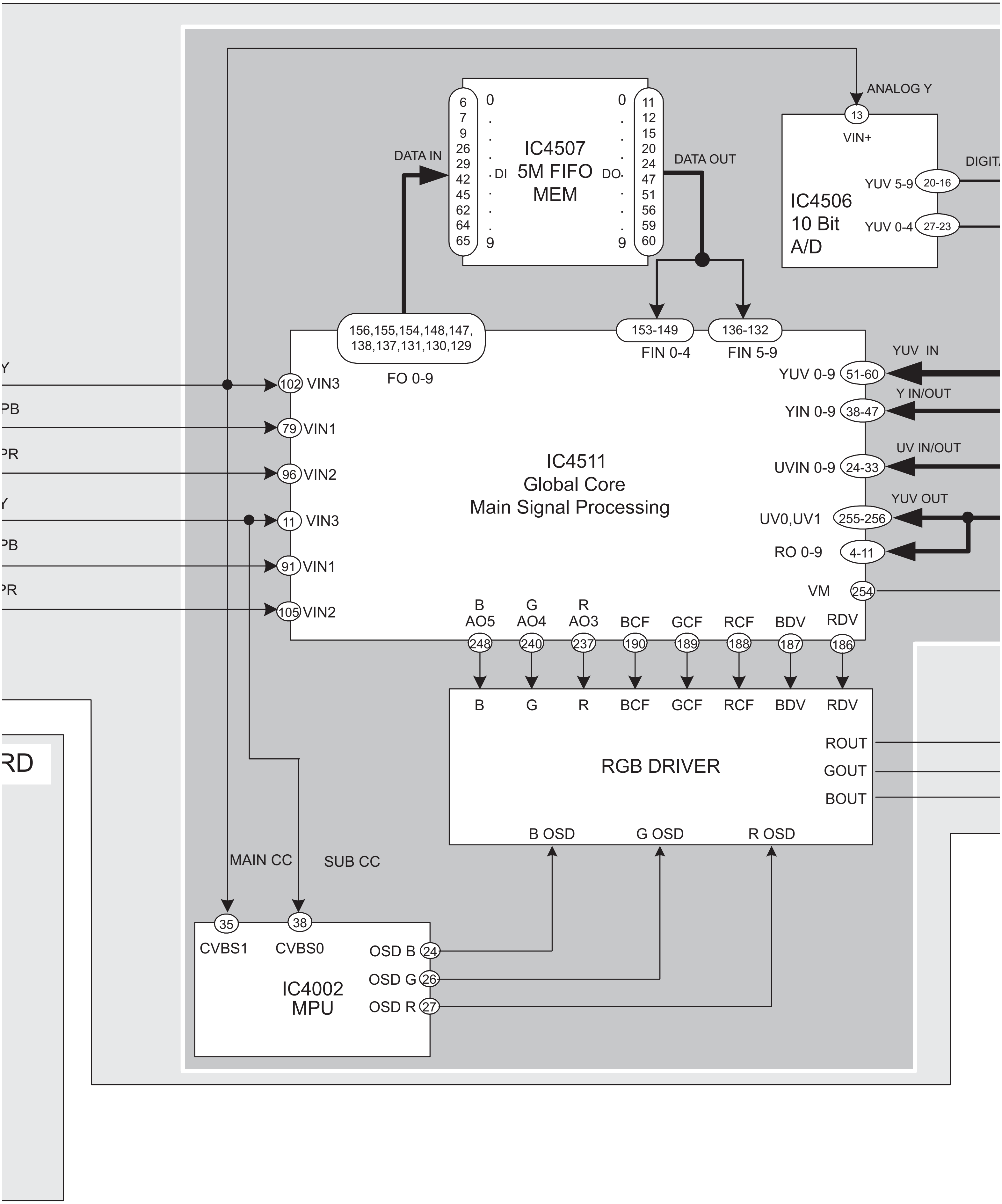


A-BOARD
V 1
V2
V 3
V
V OUT
V1
C1
Y1
V2
C2
Y2
V3
Q3026
H-BOARD
R3115
R3119
R3117
R3109
R3113
R3110
R3106
R3025
22
26
24
15
19
17
8
53
V4
C4
Y4
V3
C3
Y3
V2
YIN1
YOUT1
56
R3124
Y-IN
66
TNR001
R3127
60
V5
TV1-V
COUT1
58
R3125
C-IN
67
IC3003
A/V SWITCH
TNR002
R3129
63
TV
TV2-V
YOUT2
39
R3122
Y-IN
14
COUT2
37
R3121
C-IN
16
V1
C1
Y1
1
5
3
R3100
R3104
R3102
A/V 4
G-BOARD

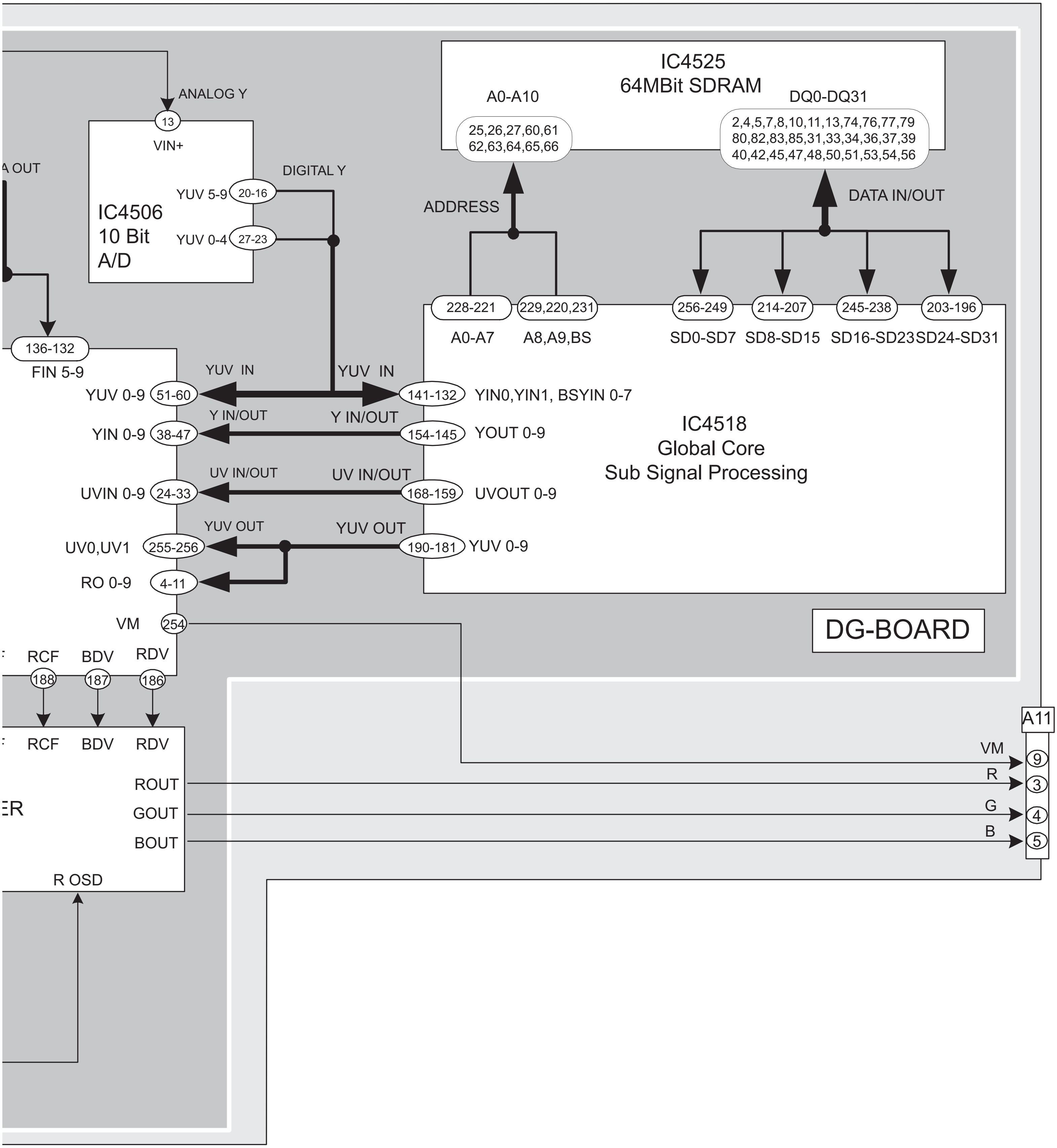
VIDEO BLOCK DIAGRAM 1/4 CT-32HC14J/UJ


YUV 1
YUV 2
UT
H-BOARD
Y1
PB1
PR1
Y2
PB2
PR2
R3162
R3163
R3164
R3188
R3189
R3190
5
7
9
74
75
76
Y3
PB3
PR3
SY_S
SC_S
SY_S
156,15
138,1
R3124
Y-IN
66
Y2
R3125
C-IN
67
PB2
R3122
Y-IN
14
SY_M
R3121
C-IN
16
SC_M
IC3002
A/V SWITCH
MAIN Y
YOUT1
46
MAIN PB
PBOUT1
44
MAIN PR
PROUT 1
43
SUB Y
YOUT2
38
SUB PB
PBOUT2
36
SUB PR
PROUT2
35
102
VIN3
79
VIN1
96
VIN2
11
VIN3
91
VIN1
105
VIN2
Y4
PB4
PR4
14
16
18
DV-BOARD
13
14
15
V OUT
Y OUT
U OUT
IC5102
YUV
CONVERTER
RIN
GIN
BIN
6
7
8
23
26
31
IOR
IOG
IOB
IC5001
DVI
CONTROLLER
RX0-
RX0+
RX1-
RX1+
RX2-
RX2+
3
2
52
51
49
48
MAIN CC
SUB CC
35
38
CVBS1
CVBS0
IC4002
MPU
OS
OS
OS

VIDEO BLOCK DIAGRAM 2/4 CT-32HC14J/UJ


ANALOG Y
13
VIN+
IC4506
10 Bit
A/D
DIGIT
YUV 5-9
20-16
YUV 0-4
27-23
IC4507
5M FIFO
MEM
DATA IN
DI
DO
DATA OUT
0
9
6
7
9
26
29
42
45
62
64
65
11
12
15
20
24
47
51
56
59
60
156,155,154,148,147,
138,137,131,130,129
FO 0-9
153-149
FIN 0-4
136-132
FIN 5-9
IC4511
Global Core
Main Signal Processing
Y
102
VIN3
PB
79
VIN1
PR
96
VIN2
Y
11
VIN3
PB
91
VIN1
PR
105
VIN2
YUV IN
YUV 0-9
51-60
Y IN/OUT
YIN 0-9
38-47
UV IN/OUT
UVIN 0-9
24-33
YUV OUT
UV0,UV1
255-256
RO 0-9
4-11
VM
254
B
AO5
248
G
AO4
240
R
AO3
237
BCF
190
GCF
189
RCF
188
BDV
187
RDV
186
RGB DRIVER
B
G
R
BCF
GCF
RCF
BDV
RDV
ROUT
GOUT
BOUT
B OSD
G OSD
R OSD
RD
MAIN CC
SUB CC
IC4002
MPU
35
CVBS1
38
CVBS0
OSD B
24
OSD G
26
OSD R
27

VIDEO BLOCK DIAGRAM 3/4 CT-32HC14J/UJ


IC4525
64MBit SDRAM
A0-A10
25,26,27,60,61
62,63,64,65,66
DQ0-DQ31
2,4,5,7,8,10,11,13,74,76,77,79
80,82,83,85,31,33,34,36,37,39
40,42,45,47,48,50,51,53,54,56
ADDRESS
DATA IN/OUT
ANALOG Y
13
VIN+
A OUT
IC4506
10 Bit
A/D
YUV 5-9
20-16
YUV 0-4
27-23
DIGITAL Y
228-221
229,220,231
256-249
214-207
245-238
203-196
A0-A7
A8,A9,BS
SD0-SD7
SD8-SD15
SD16-SD23
SD24-SD31
136-132
FIN 5-9
YUV IN
YUV IN
YUV 0-9
51-60
141-132
YIN0,YIN1, BSYIN 0-7
Y IN/OUT
Y IN/OUT
YIN 0-9
38-47
154-145
YOUT 0-9
IC4518
Global Core
Sub Signal Processing
UV IN/OUT
UV IN/OUT
UVIN 0-9
24-33
168-159
UVOUT 0-9
YUV OUT
YUV OUT
UV0,UV1
255-256
190-181
YUV 0-9
RO 0-9
4-11
VM
254
DG-BOARD
RCF
BDV
RDV
188
187
186
RCF
BDV
RDV
ROUT
GOUT
BOUT
ER
R OSD
A11
VM
9
R
3
G
4
B
5

VIDEO BLOCK DIAGRAM 4/4 CT-32HC14J/UJ

A-BOARD - TNP2AH063

IC3002

1	5.22	41	4.58
2	4.90	42	0.00
3	4.90	43	4.56
4	0.00	44	4.56
5	4.74	45	0.00
6	0.00	46	4.57
7	4.76	47	9.14
8	5.10	48	4.79
9	4.76	49	0.00
10	0.39	50	4.78
11	4.56	51	5.10
12	4.56	52	4.78
13	0.00	53	0.45
14	4.76	54	4.56
15	0.00	55	4.56
16	4.77	56	0.00
17	5.09	57	4.76
18	4.77	58	0.00
19	0.40	59	4.75
20	4.56	60	5.10
21	4.56	61	4.76
22	0.00	62	0.48
23	4.59	63	0.00
24	4.59	64	4.56
25	0.00	65	0.00
26	4.62	66	0.00
27	4.63	67	4.74
28	0.00	68	0.00
29	0.00	69	0.00
30	4.62	70	4.56
31	9.14	71	4.56
32	4.60	72	0.00
33	4.60	73	0.00
34	0.00	74	4.76
35	4.55	75	4.76
36	4.55	76	4.75
37	0.00	77	0.00
38	4.56	78	4.56
39	4.56	79	4.56
40	4.56	80	0.00

IC3003

1	4.00	33	4.80
2	4.56	34	4.80
3	4.00	35	0.00
4	4.56	36	0.00
5	4.52	37	4.43
6	0.15	38	4.58
7	5.00	39	4.30
8	4.00	40	4.58
9	4.56	41	4.58
10	4.30	42	9.17
11	4.56	43	4.51
12	4.51	44	0.00
13	0.16	45	5.00
14	5.10	46	0.00
15	4.00	47	0.00
16	4.56	48	0.00
17	4.00	49	5.00
18	4.56	50	4.58
19	4.51	51	4.51
20	0.18	52	4.59
21	5.10	53	4.58
22	4.00	54	4.59
23	4.56	55	3.74
24	4.00	56	4.30
25	4.56	57	0.00
26	4.51	58	4.43
27	0.16	59	4.56
28	5.10	60	4.43
29	0.00	61	4.56
30	0.00	62	4.56
31	0.00	63	4.22
32	0.00	64	4.56

IC872

1	15.87
2	2.83
3	0.00
4	1.24
5	6.75

IC875

1	27.34
2	9.42
3	0.00
4	1.24
5	6.74

IC2451

1	4.57	16	9.18
2	4.63	17	4.78
3	4.62	18	0.00
4	4.58	19	3.97
5	4.58	20	3.97
6	4.62	21	4.57
7	4.62	22	4.63
8	4.62	23	4.62
9	1.38	24	4.62
10	4.62	25	4.62
11	1.67	26	4.60
12	1.67	27	4.60
13	4.90	28	4.60
14	4.90	29	4.63
15	0.00	30	4.57

IC2201

1	0.00	13	3.58
2	0.00	14	2.19
3	0.00	15	3.57
4	2.29	16	3.66
5	2.19	17	0.00
6	0.33	18	4.90
7	5.12	19	4.90
8	2.23	20	0.00
9	2.40	21	2.21
10	0.43	22	2.21
11	2.25	23	0.00
12	3.43	24	0.00

IC1004

1	0.00
2	0.00
3	0.00
4	0.00
5	2.17
6	0.00
7	0.00
8	3.32

IC871

1	15.87
2	5.41
3	0.00
4	1.24
5	6.77

IC2303

1	-10.33
2	0.00
3	0.00
4	-16.90
5	0.00
6	0.00
7	-10.34
8	10.44

IC2301

1	-10.33
2	-9.29
3	-5.20
4	-5.20
5	16.80
6	12.10
7	-0.11
8	-16.89
9	-3.97
10	-16.89
11	-0.14
12	12.20
13	16.80
14	-5.20
15	-3.97
16	-9.43
17	-10.34

IC4803

1	5.53
2	3.67
3	3.68
4	0.00
5	2.78
6	2.78
7	5.60
8	5.60
9	11.86

A-BOARD - TNP2AH063

	Q007	Q802	Q803	Q880	Q2301	Q2302
B	0.71	0.71	0.00	3.32	15.92	15.92
E	0.00	0.00	0.00	3.32	10.90	10.90
C	0.00	0.00	15.91	-1.13	0.27	-0.12

	Q2303	Q2304	Q2306	Q2307	Q2308	Q2310
B	0.00	0.00	-0.11	0.00	0.00	16.02
E	0.00	0.00	0.00	-0.30	2.68	0.00
C	0.00	15.92	5.18	0.00	0.00	9.75

	Q2311	Q2312	Q2317	Q2318	Q2336	Q2337
B	12.61	0.00	-0.53	-0.53	0.00	0.00
E	0.00	16.02	3.29	3.29	-0.13	-0.15
C	9.76	0.00	0.00	0.00	-0.14	15.91

	Q2338	Q2339	Q2340	Q2451	Q2452
B	0.00	0.00	0.00	4.60	4.60
E	0.00	-0.17	-0.18	3.97	3.96
C	-0.12	5.94	-1.12	9.18	9.18

D-BOARD - TNPH0466AG

IC451	
1	0.00
2	-16.35
3	0.00
4	15.55
5	1.30
6	1.30
7	16.00
8	-14.68
9	15.84
10	-14.67

IC500	
1	142.6
2	142.6
3	143.8
4	143.9
5	137.5
6	143.9
7	143.9
8	150.0
9	149.7
10	150.5

IC511	
1	3.76
2	3.22
3	3.23
4	0.00
5	0.00
6	0.00
7	0.36
8	11.87

IC751	
1	3.97
2	7.10
3	5.54
4	0.00
5	1.50
6	0.64
7	9.47
8	11.87

IC1501	
1	0.00
2	5.90
3	5.16
4	0.00
5	4.68
6	4.80
7	0.63
8	11.87

IC752	
1	11.87
2	3.97
3	0.00
4	0.00
5	0.00
6	29.66
7	33.52
8	42.00

IC876	
1	16.02
2	11.88
3	0.00
4	16.02

D-BOARD - TNPH0466AG

	Q404	Q405	Q406	Q503	Q509	Q510	Q512
B	0.69	16.00	0.60	0.00	43.20	48.91	5.74
E	0.00	16.40	0.00	0.00	48.70	48.23	5.82
C	0.16	0.00	0.00	11.86	143.40	143.40	11.87

	Q513	Q551	Q562	Q752	Q754	Q804	Q854
B	0.28	0.00	3.76	1.41	-0.44	27.51	143.50
E	0.00	0.00	3.22	0.82	0.00	27.81	143.80
C	5.74	-102.20	126.30	5.55	7.05	0.00	0.00

	Q860	Q861	Q862	Q1503	Q1504	Q1505	Q1506
B	0.00	0.61	-0.56	18.97	2.22	4.55	0.38
E	0.00	0.00	0.00	18.47	1.64	4.61	0.00
C	0.63	0.00	0.63	266.2	18.47	11.87	4.56

	Q502	Q751	Q755	Q1501	Q1502
G	11.87	9.46	33.50	4.62	11.87
D	0.00	0.00	33.10	62.60	0.00
S	0.00	0.00	29.70	0.00	0.00

L-BOARD - TNP2AA139ACM

IC3801	
1	6.66
2	0.00
3	2.44
4	0.00
5	4.35
6	210.80
7	21.53
8	144.50
9	0.00

IC3802	
1	6.68
2	0.00
3	2.49
4	0.00
5	4.19
6	210.80
7	21.58
8	140.40
9	0.00

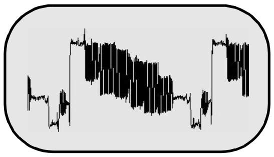
IC3803	
1	6.70
2	0.00
3	2.48
4	0.00
5	3.82
6	210.80
7	21.47
8	142.00
9	0.00

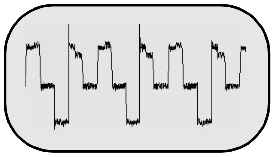
IC901	
1	1.38
2	2.97
3	0.70
4	11.69
5	0.00
6	0.00
7	0.19
8	69.00
9	69.00
10	141.00
11	141.00

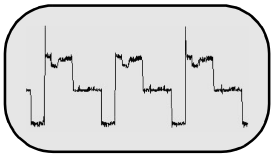
IC3802	
1	4.55
2	4.55
3	4.54
4	0.16
5	4.54
6	0.21
7	0.00
8	4.56
9	0.00
10	4.88
11	4.88
12	9.21
13	4.56
14	4.56
15	4.53
16	4.56
17	4.53
18	4.56

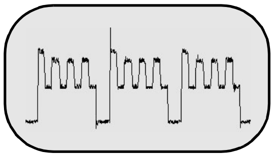
IC901	
1	14.61
2	14.61
3	0.30
4	0.30
5	-16.37
6	2.82
7	2.83
8	2.83
9	2.83
10	15.96

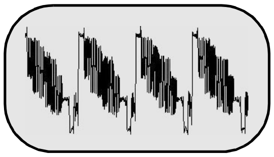
A-Board TNP2AH063

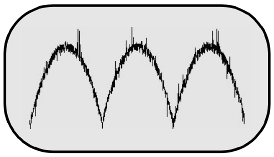

① **1.00 Vp-p**
TNR001 (MAIN VIDEO)

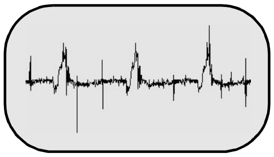

② **2.88 Vp-p**
A11 PIN 3 (RED OUT)

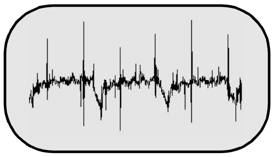

③ **2.88 Vp-p**
A11 PIN 4 (GREEN OUT)

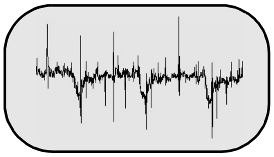

④ **2.88 Vp-p**
A11 PIN 5 (BLUE OUT)

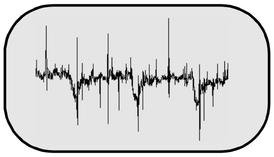

⑤ **2.06 Vp-p**
A22 PIN 17 (MAIN Y)

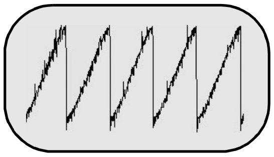

⑥ **0.80 Vp-p**
A23 PIN 1 (V-DAF)

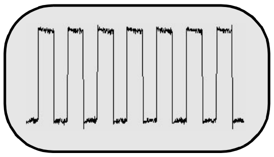

⑦ **0.37 Vp-p**
A23 PIN 2 (ABL)

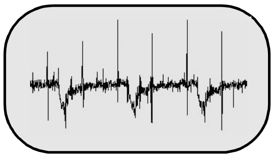

⑧ **0.15 Vp-p**
A23 PIN 3 (HHS REF)

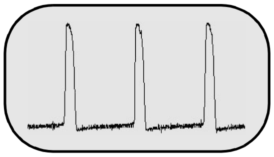

⑨ **0.12 Vp-p**
A23 PIN 7 (MOMENT BSW)

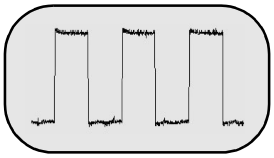

⑩ **0.13 Vp-p**
A23 PIN 10 (V_RASTER)

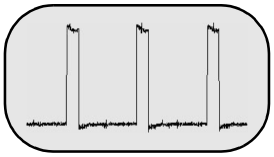

⑪ **0.86 Vp-p**
A23 PIN 13 (V_DRIVE)

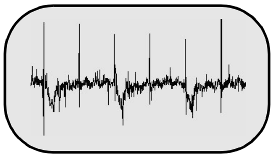

⑫ **3.36 Vp-p**
A23 PIN 30 (H_DAF)


⑬ **0.11 Vp-p**
A23 PIN 29 (EHT DET)

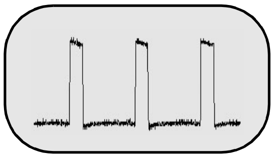

⑭ **3.8 Vp-p**
A23 PIN 28 (FBP)


⑮ **3.4 Vp-p**
A23 PIN 27 (H DRIVE)

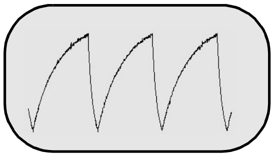

⑯ **3.4 Vp-p**
A23 PIN 26 (EW DRIVE)


⑰ **0.11 Vp-p**
A23 PIN 25 (H RASTER)

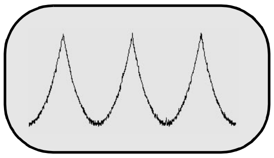
D-Board TNPH0466AG



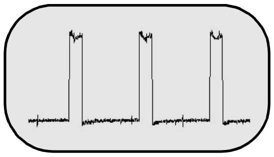
① **12.6 Vp-p**
IC751 PIN 1



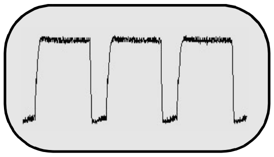
② **9.12 Vp-p**
IC751 PIN 2



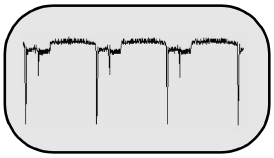
③ **5.92 Vp-p**
IC751 PIN 3



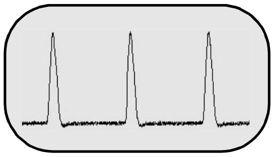
④ **3.44 Vp-p**
IC751 PIN 6



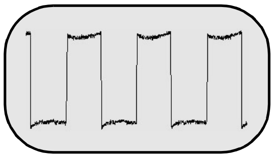
⑤ **12.4 Vp-p**
IC751 PIN 7



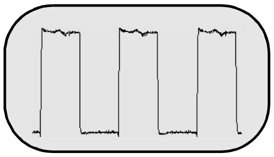
⑥ **14.0 Vp-p**
Q551-B



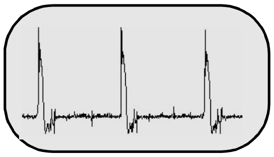
⑦ **1.56 KVp-p**
Q551-C



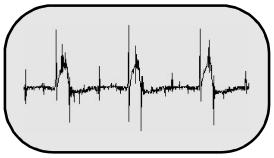
⑧ **20.4 Vp-p**
Q501-D



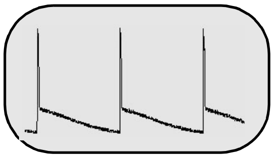
⑨ **11.5 Vp-p**
Q501-G



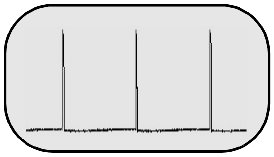
⑩ **3.4 Vp-p**
Q502-D



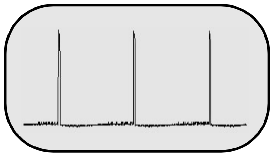
⑪ **0.82 Vp-p**
Q502-G



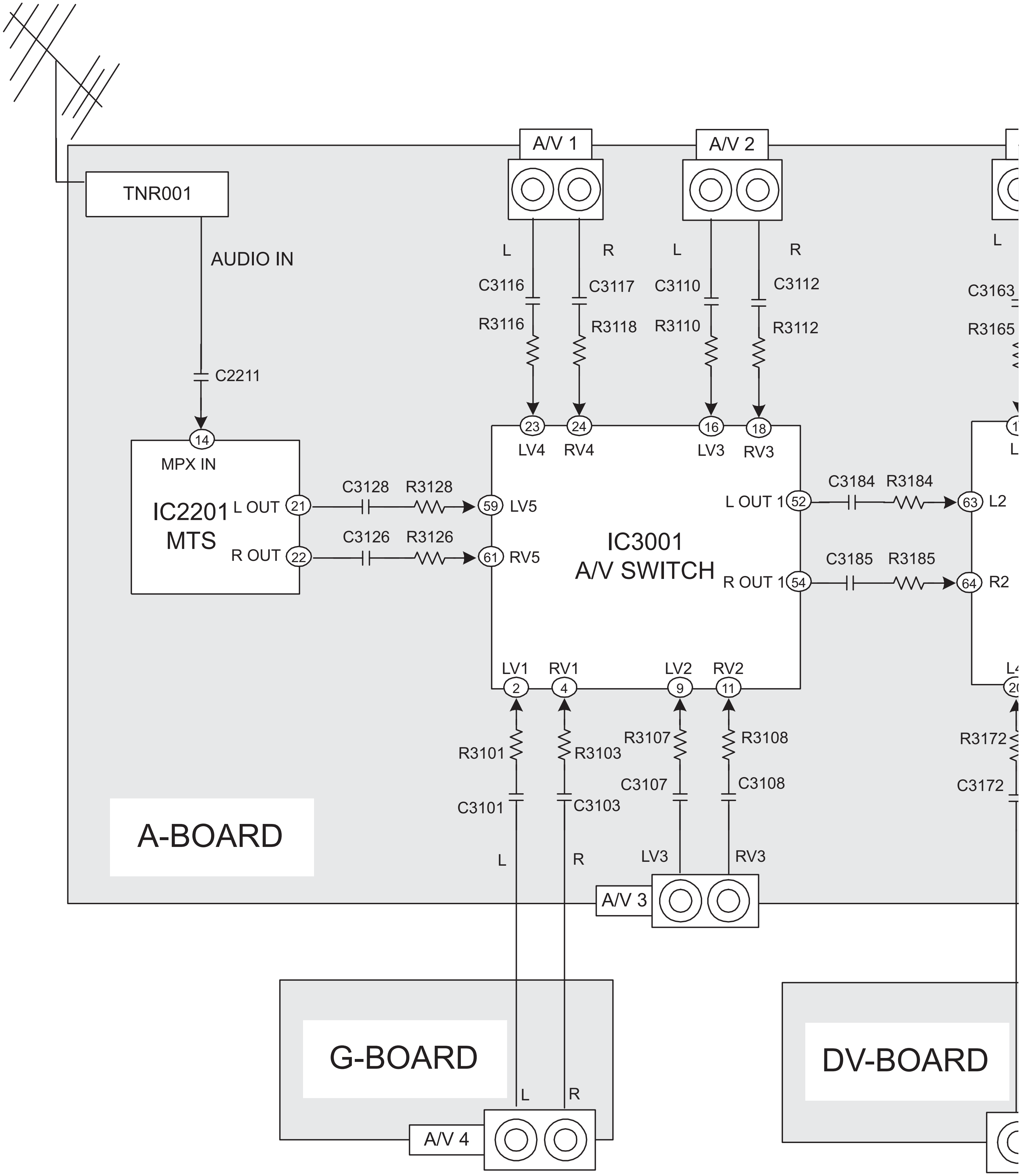
⑫ **84.0 Vp-p**
IC451 PIN 3



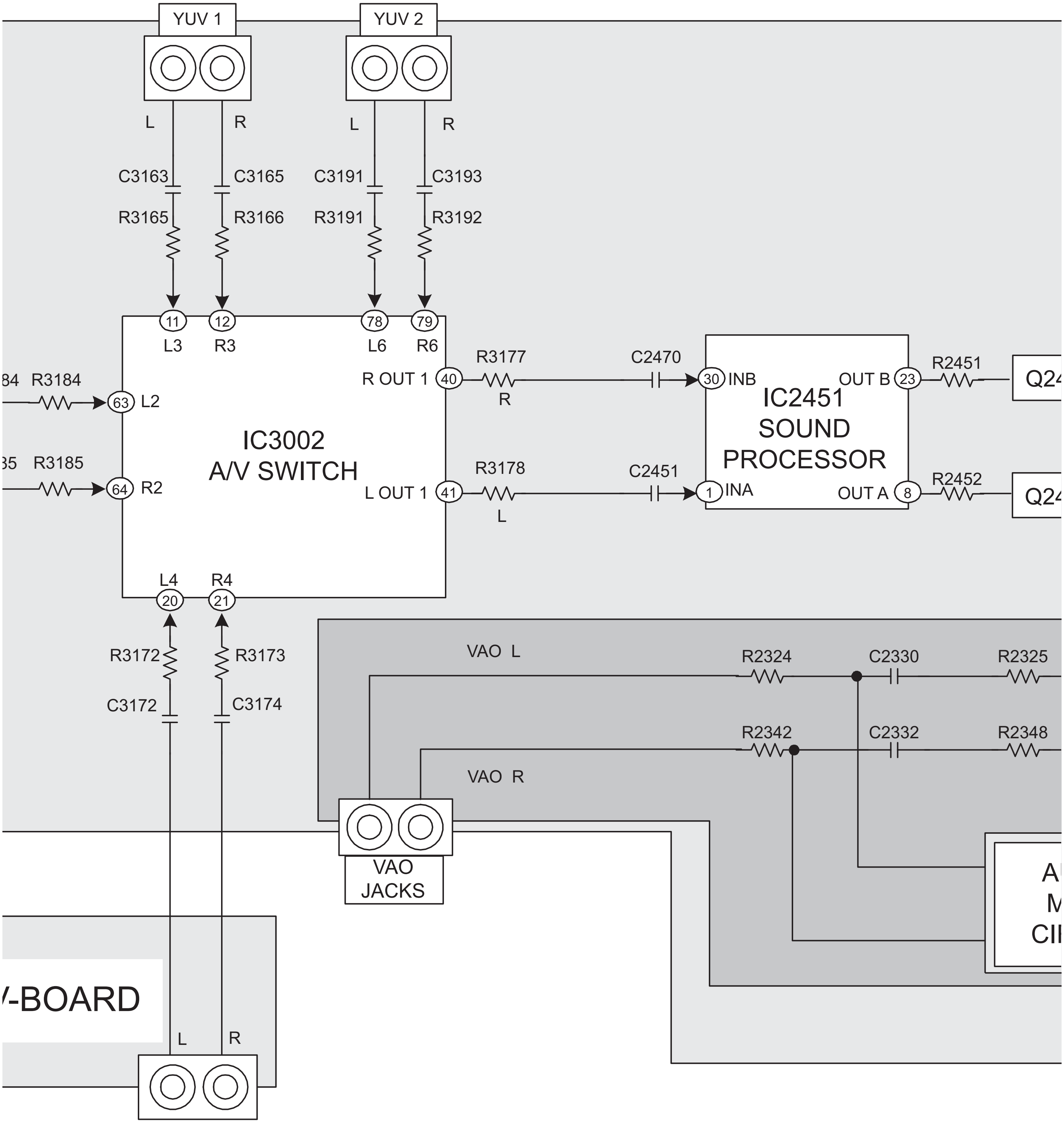
⑬ **64.8 Vp-p**
IC451 PIN 4



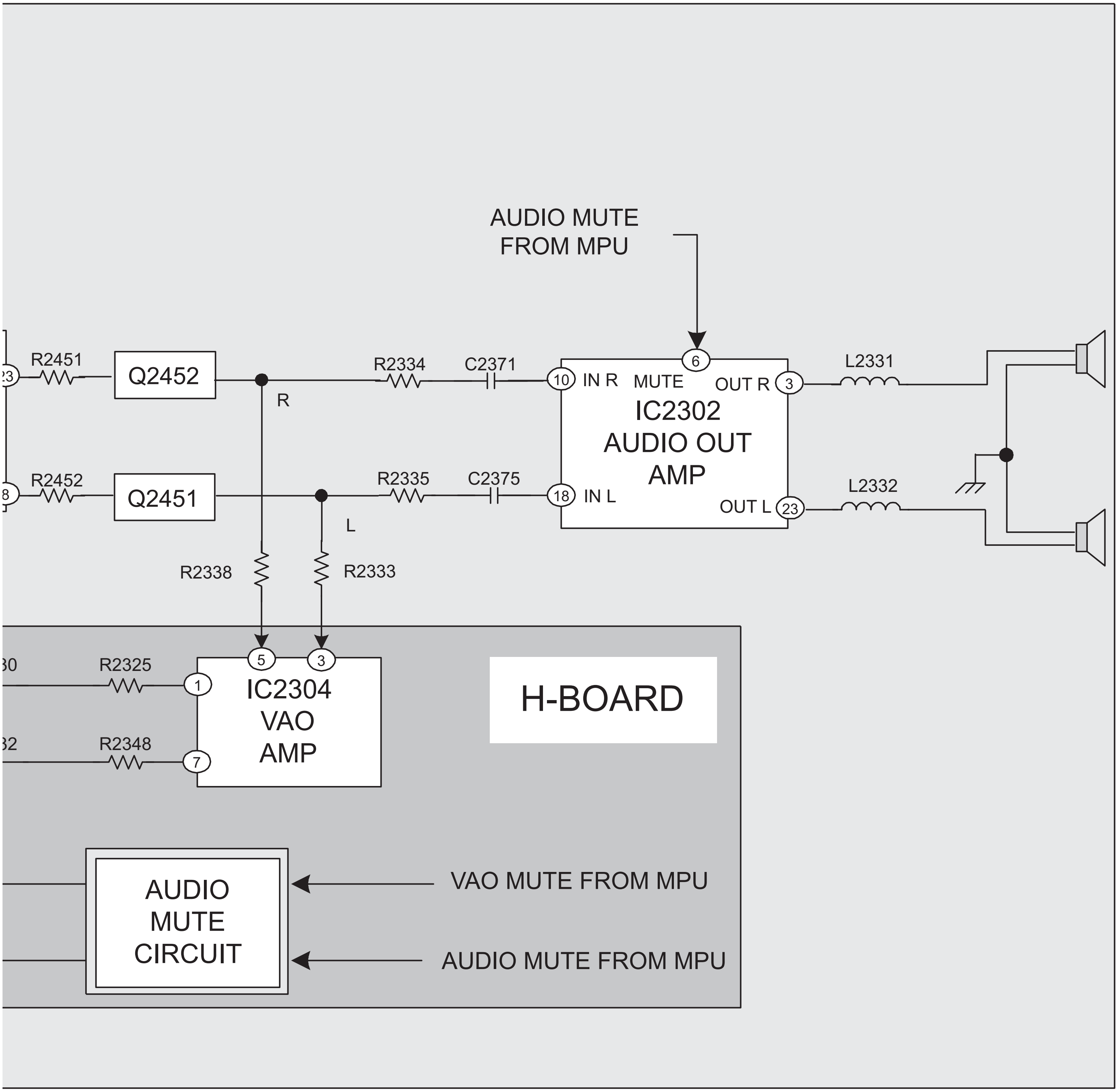
⑭ **31.6 Vp-p**
IC451 PIN 8


TNR001
AUDIO IN
C2211
14
MPX IN
IC2201
MTS
L OUT
21
R OUT
22
C3128
R3128
C3126
R3126
A/V 1
A/V 2
L
R
L
R
C3116
C3117
C3110
C3112
R3116
R3118
R3110
R3112
23
24
16
18
LV4
RV4
LV3
RV3
59
LV5
61
RV5
IC3001
A/V SWITCH
L OUT 1
52
R OUT 1
54
C3184
R3184
C3185
R3185
63
L2
64
R2
L
C3163
R3165
LV1
RV1
LV2
RV2
2
4
9
11
R3101
R3103
R3107
R3108
C3107
C3108
C3101
C3103
L
R
LV3
RV3
A/V 3
R3172
C3172
A-BOARD
G-BOARD
L
R
A/V 4
DV-BOARD

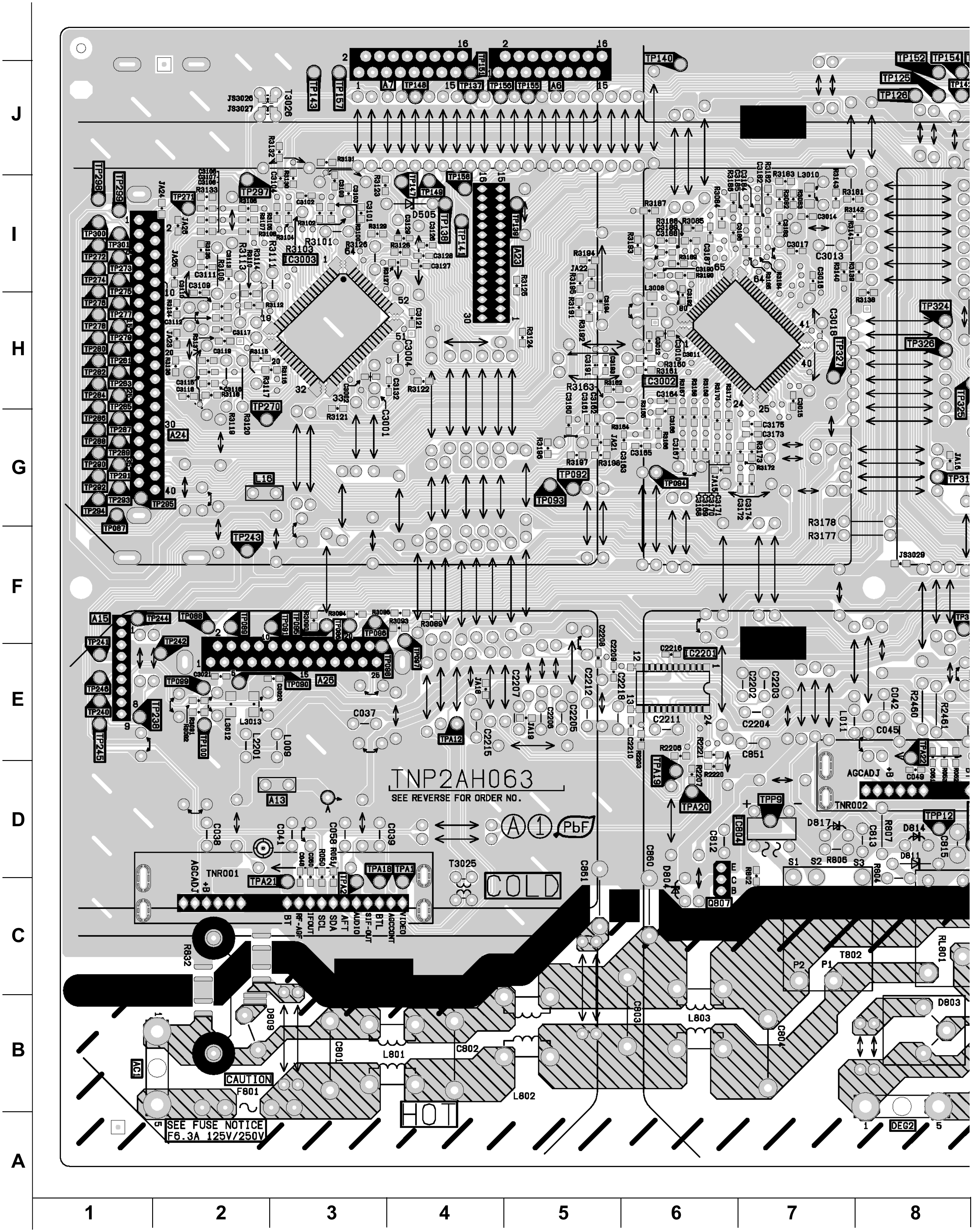
AUDIO BLOCK DIAGRAM 1/3 CT-32HC14J/UJ

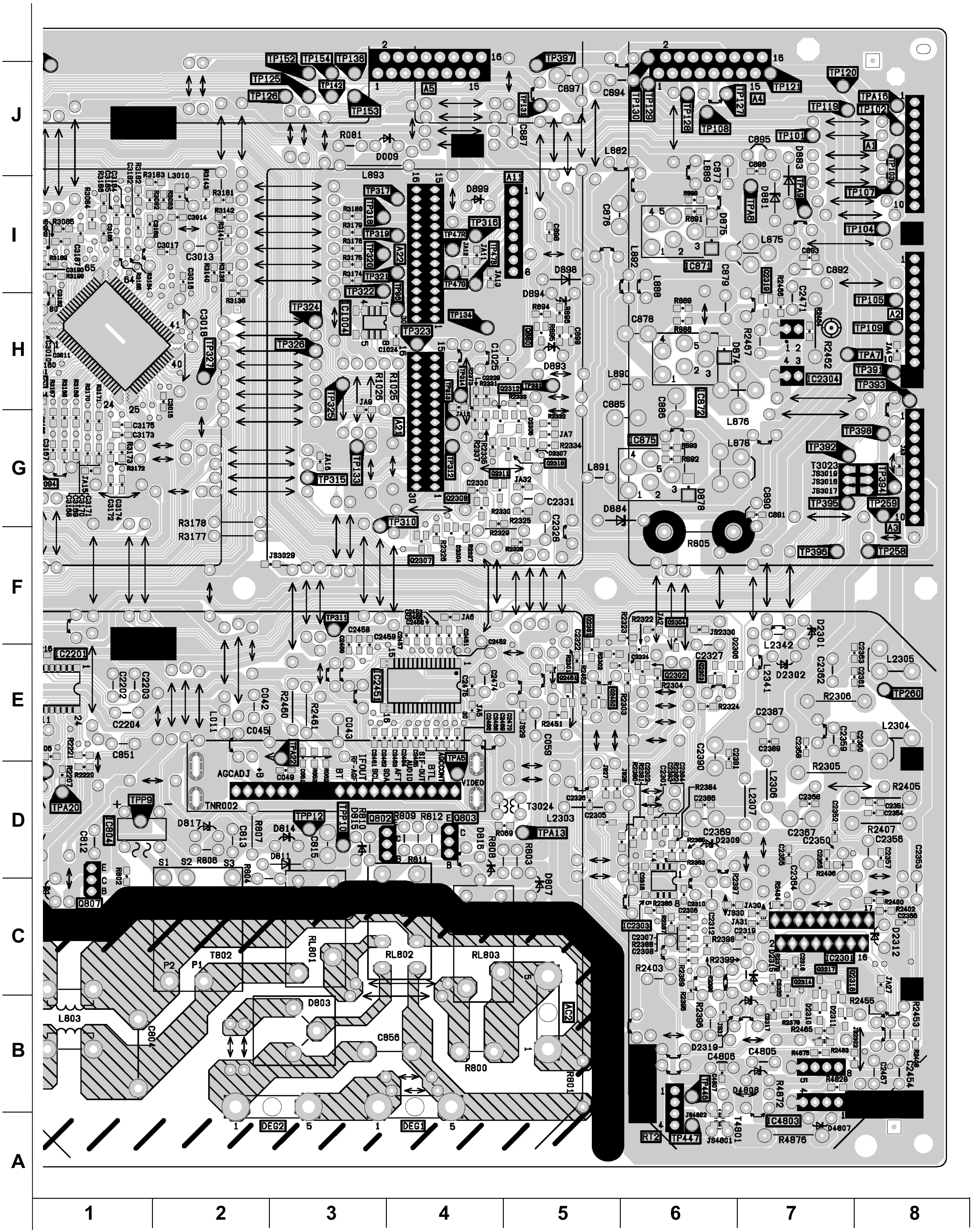

YUV 1
YUV 2
L
R
L
R
C3163
C3165
C3191
C3193
R3165
R3166
R3191
R3192
11
12
78
79
L3
R3
L6
R6
84
R3184
63
L2
35
R3185
64
R2
IC3002
A/V SWITCH
R OUT 1
40
L OUT 1
41
R3177
R
R3178
L
C2470
C2451
30
INB
1
INA
IC2451
SOUND
PROCESSOR
OUT B
23
OUT A
8
R2451
R2452
Q24
Q24
L4
R4
20
21
R3172
R3173
C3172
C3174
VAO L
VAO R
R2324
C2330
R2325
R2342
C2332
R2348
VAO
JACKS
A
M
CI
/-BOARD
L
R

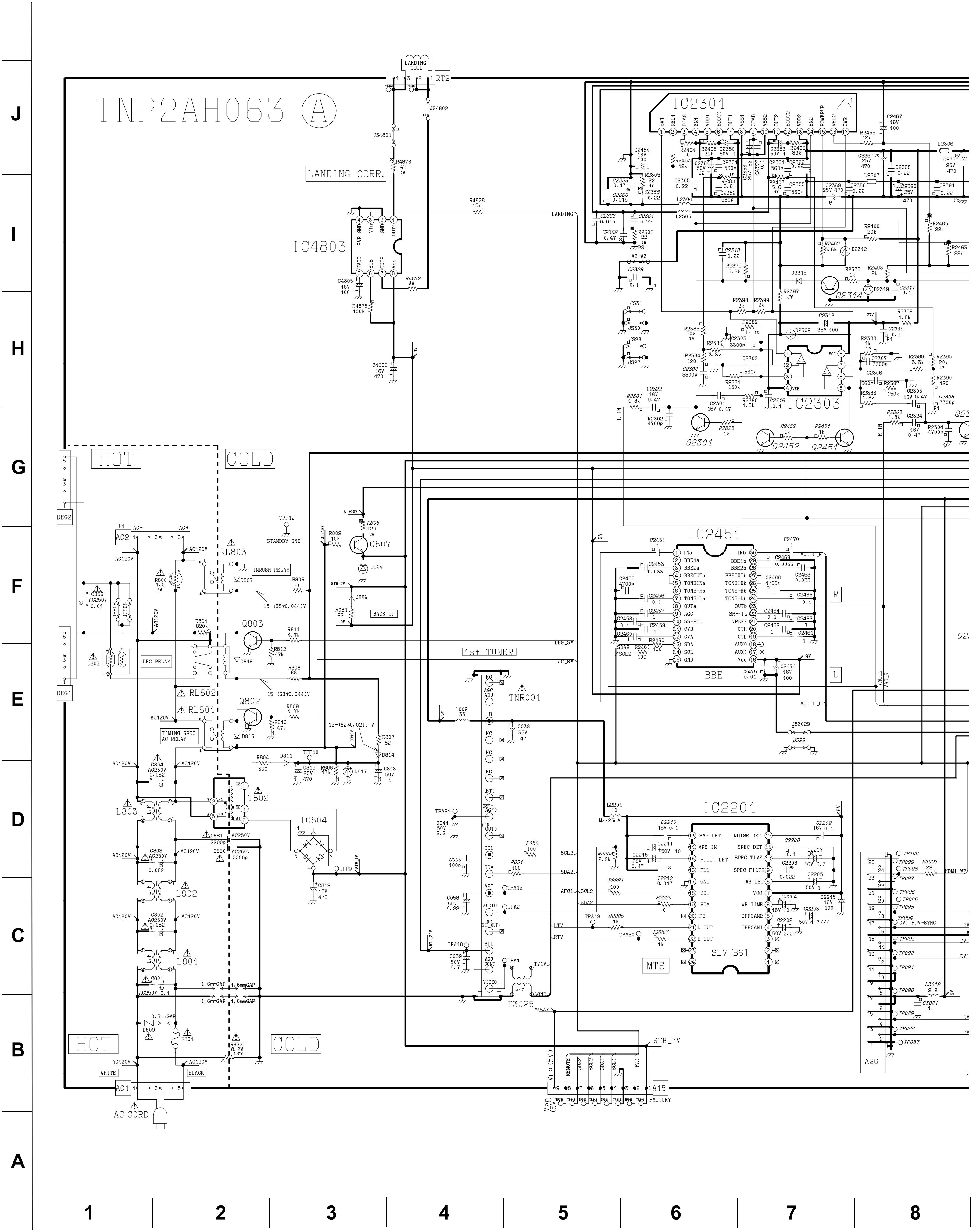
AUDIO BLOCK DIAGRAM 2/3 CT-32HC14J/UJ

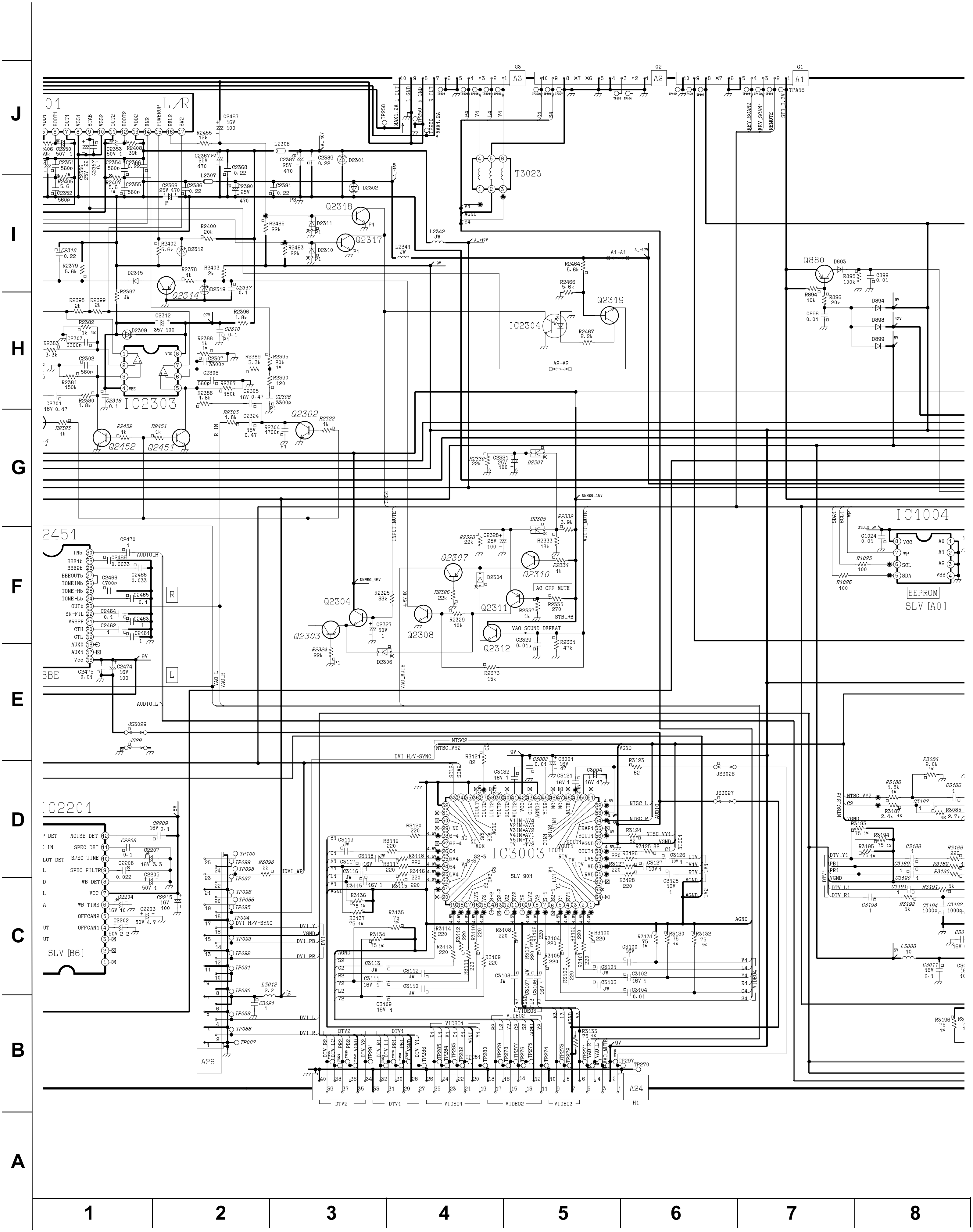

AUDIO MUTE
FROM MPU
R2451
Q2452
R
R2334
C2371
6
10
IN R
MUTE
OUT R
3
IC2302
AUDIO OUT
AMP
L2331
23
R2452
Q2451
L
R2335
C2375
18
IN L
OUT L
23
L2332
8
R2338
R2333
5
3
30
R2325
1
IC2304
VAO
AMP
32
R2348
7
H-BOARD
AUDIO
MUTE
CIRCUIT
VAO MUTE FROM MPU
AUDIO MUTE FROM MPU

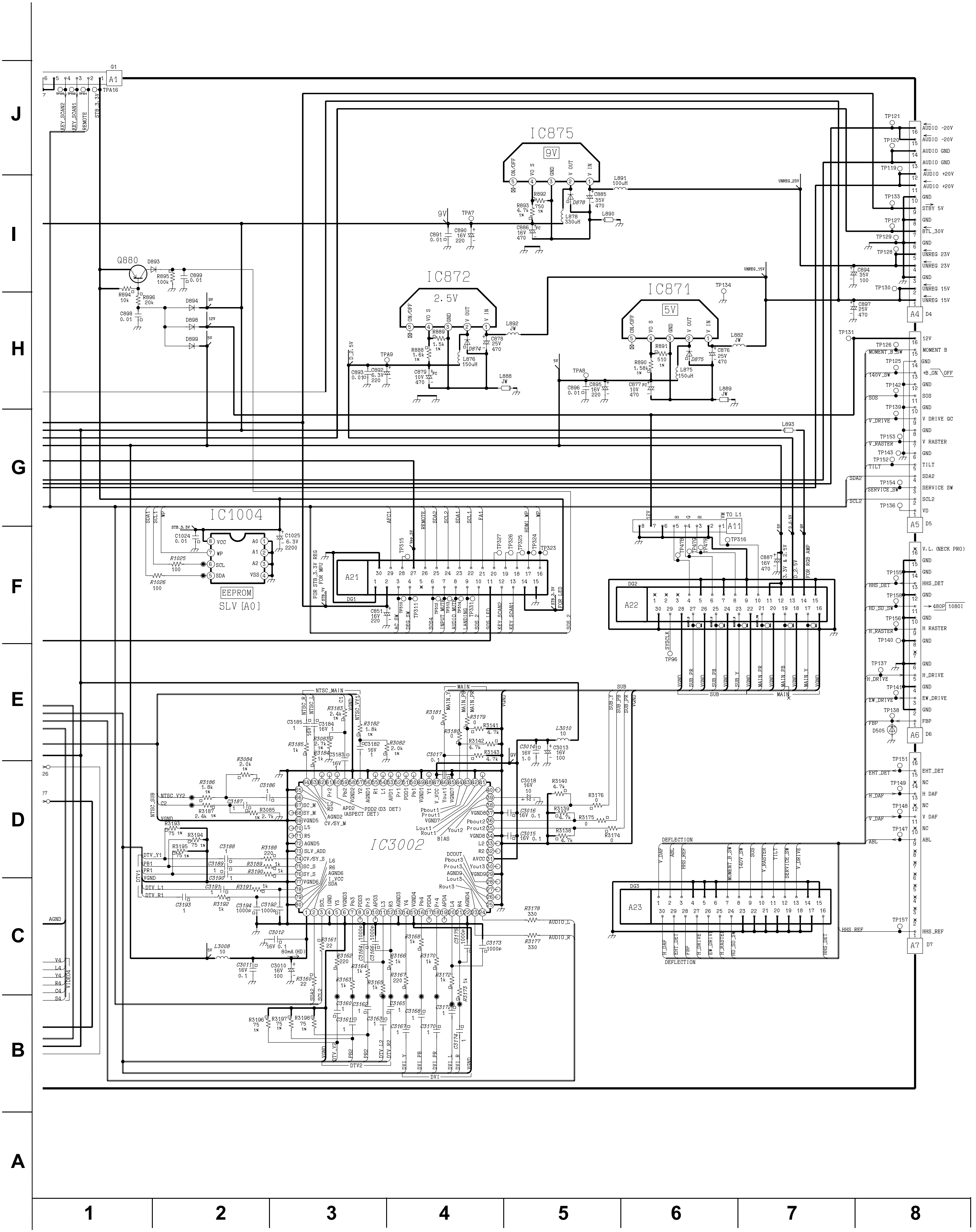
AUDIO BLOCK DIAGRAM 3/3 CT-32HC14J/UJ

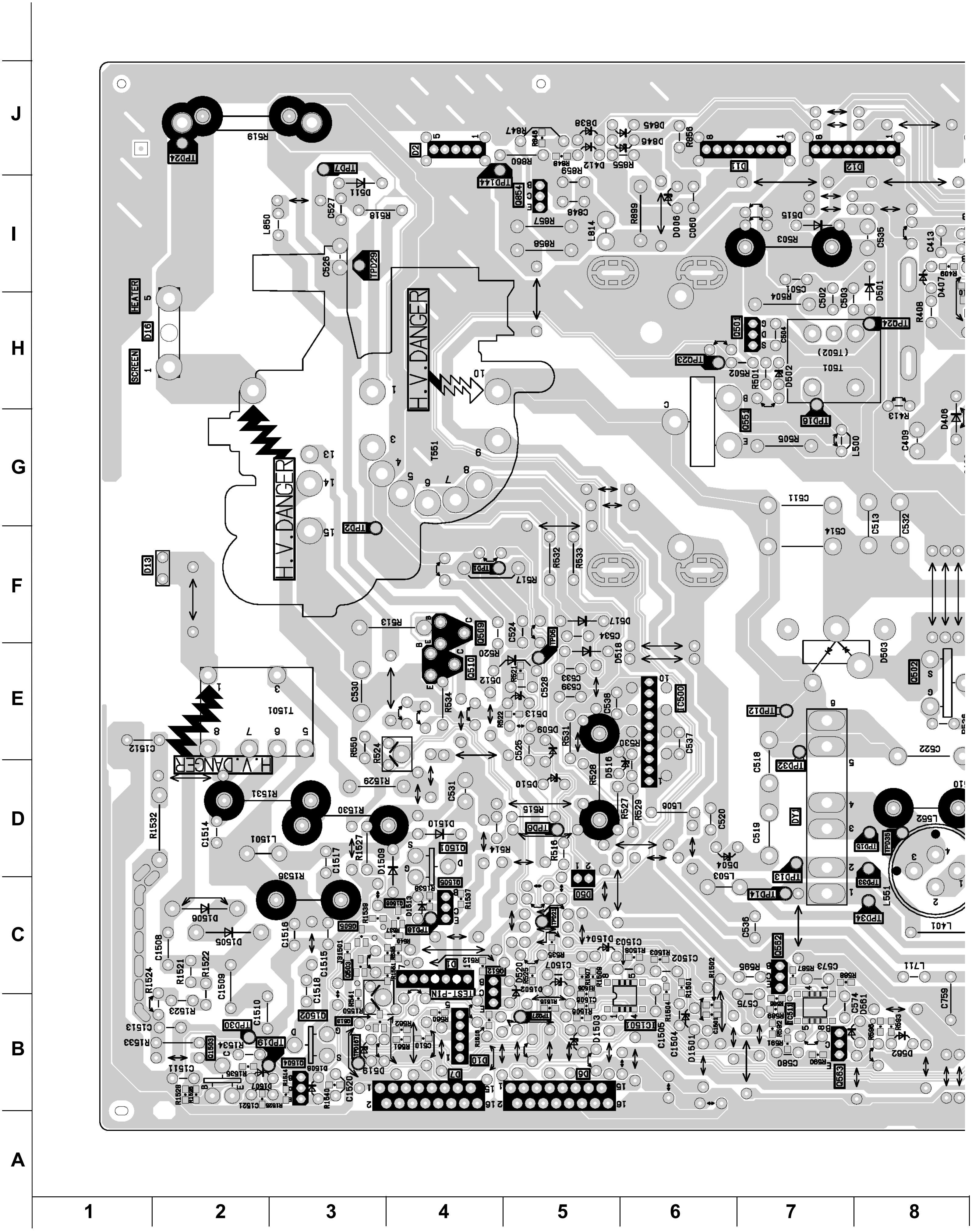
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TNP2AH063
SEE REVERSE FOR ORDER NO.
A
1
PbF
COLD
HOT
CAUTION
F801
SEE FUSE NOTICE
F6.3A 125V/250V
IC3003
IC3002
IC2201
IC804
TNR001
TNR002
AGCADJ
+B
BT
RF-AGF
IFOUT
SCL
SDA
AFT
AUDIO
SIF-OUT
BTL
ACCONT
VIDEO
A7
A6
A23
A24
A15
A26
A13
L16
T3025
T802
L801
L802
L803
C801
C802
C803
C804
D803
D804
D809
RL801
DEG2
AC1
Q807
R632
D505
S1
S2
S3
P1
P2
TP243
TP270
TP297
TP092
TP093
TP094
TPA12
TPA19
TPA20
TPA21
TPP9
TPP12
TP324
TP326
TP327
JS3026
JS3027
JS3029
T3026
R3178
R3177


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
TP152
TP154
TP136
TP125
TP126
TP142
TP153
A5
TP397
C897
C894
TP131
C887
R081
D009
L893
A11
TP317
TP318
TP319
TP320
A22
TP321
TP322
TP316
TP47R
TP47B
TP476
D899
D898
D894
IC1004
TP324
TP326
TP327
TP134
TP323
C1025
D893
TP325
R1026
R1025
A21
TP315
TP133
TP312
TP310
R3178
R3177
JS3029
TP130
TP129
TP128
TP127
TP108
A4
TP121
TP120
TP119
TP102
TPA16
TP101
A1
TP103
TP107
TP104
C895
D883
L882
L889
C877
D881
TPA9
TPA8
C876
L892
IC871
C879
D875
L875
C893
C892
L888
C878
R888
D874
R2467
R2462
TP105
A2
TP109
TPA7
TP391
IC2304
TP393
L890
C885
C886
IC872
L876
IC875
L878
TP398
TP392
T3023
JS3019
JS3018
JS3017
TP394
L891
D878
D884
C890
C891
TP395
TP259
A3
R805
TP396
TP258
IC2201
C2202
C2203
C2204
TP311
C2458
C2459
IC2451
R2460
R2461
C042
C045
C043
L011
C851
TPA22
TPA6
AGCADJ
+B
AGCONT
VIDEO
TNR002
C059
T3024
L2303
TPA13
TPA20
TPP9
IC804
D817
C813
R807
D814
TPP12
TPP10
D815
R810
Q802
R809
R812
Q803
D816
C812
Q807
R806
S1
S2
S3
R804
D811
C815
R811
R803
D807
L2342
D2301
C2327
D2302
L2305
C2363
R2306
TP260
C2387
L2304
C2390
L2306
L2307
R2305
R2405
R2384
C2369
D2309
C2367
R2407
C2350
C2356
IC2303
IC2301
D2312
R2403
R2399
R2398
R2455
R2453
D2319
C4806
C4805
C2454
TP446
D4808
R4872
IC4803
D4807
RT2
TP447
T4801
R4876
T802
P1
P2
RL801
RL802
RL803
D803
C856
R800
AC2
R801
L803
C804
DEG2
DEG1
1
5
1
5


TNP2AH063 (A)
LANDING COIL
RT2
LANDING CORR.
IC4803
IC2301 L/R
IC2303
IC2451
BBE
IC2201
SLV [B6]
MTS
1st TUNER
TNR001
T3025
HOT
COLD
DEG2
DEG1
AC2
RL803
INRUSH RELAY
RL802
DEG RELAY
RL801
TIMING SPEC AC RELAY
Q803
Q802
Q807
BACK UP
STANDBY GND
T802
IC804
L803
L802
L801
F801
AC1
WHITE
BLACK
AC CORD
A15
FACTORY
A26
Q2301
Q2452
Q2451
Q2314
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
G3
A3
G2
A2
G1
A1
TPA16
L/R
T3023
IC2303
IC2304
IC3003
SLV 90H
IC1004
EEPROM
SLV [A0]
IC2201
SLV [B6]
2451
BBE
Q2318
Q2317
Q2314
Q2319
Q880
Q2452
Q2451
Q2302
Q2304
Q2303
Q2307
Q2308
Q2310
Q2311
Q2312
AC OFF MUTE
VAO SOUND DEFEAT
STB_+B
UNREG_15V
INPUT_MUTE
AUDIO_MUTE
AUDIO_R
AUDIO_L
VAO_L
VAO_R
VAO_MUTE
NTSC2
NTSC_VY2
DVI H/V-SYNC
HDMI_WP
DVI_Y
DVI_PB
DVI_PR
DVI_L
DVI_R
JS3029
JS3026
JS3027
A1-A1
A2-A2
A24
A26
H1
DTV2
DTV1
VIDEO1
VIDEO2
VIDEO3
KEY_SCAN2
KEY_SCAN1
REMOTE
STB_3.3V
MAX1.2A
R
L


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
G1
A1
TPA16
STB_3.3V
KEY_SCAN2
KEY_SCAN1
REMOTE
IC875
9V
ON/OFF
VO S
GND
V OUT
V IN
L891 100uH
UNREG_23V
R892 750 1%
R893 4.7k 1%
D878
C885 35V 470
L878 330uH
L890
9V
TPA7
C891 0.01
C890 16V 220
C886 16V 470
Q880
D893
R895 100k
C899 0.01
R894 10k
R896 20k
C898 0.01
D894 9V
D898 12V
D899 5V
IC872
2.5V
R889 1.5k 1%
R888 1.6k 1%
D874
C878 25V 470
L876 150uH
L892 JW
D_2.5V
TPA9
C893 0.01
C892 6.3V 220
C879 10V 470
L888 JW
IC871
5V
TP134
UNREG_15V
R891 510 1%
R890 1.58k 1%
D875
C876 25V 470
L875 150uH
L882 JW
TPA8
C896 0.01
C895 16V 220
C877 10V 470
L889 JW
L893
IC1004
EEPROM
SLV [A0]
VCC
WP
SCL
SDA
A0
A1
A2
VSS
C1024 0.01
C1025 6.3V 2200
R1025 100
R1026 100
SDA1
SCL1
A21
DG1
FOR STB_3.3V REG
FOR MPU
STB_5V
C851 16V 220
AFC1
REMOTE
SDA2
SCL2
SDA1
SCL1
FA1
HDMI_WP
WP
TP315
TP327
TP326
TP325
TP324
TP323
TP310
TP311
TP312
TP313
TP314
TP331
AC_SW
DEG_SW
SOS4
INPUT_MUTE
AUDIO_MUTE
LANDING
SOS_LED
KEY_SCAN2
KEY_SCAN1
SOS_2
STB_3.3V
FOR LED
TO L1
A11
TP316
TP47B
TP47G
TP47R
C887 16V 470
3.3V & 5V
D_2.5V
FOR RGB AMP
A22
DG2
SYSCLK
TP96
VGND
SUB_PR
SUB_PB
SUB_Y
MAIN_PR
MAIN_PB
MAIN_Y
SUB
MAIN
IC3002
NTSC_MAIN
NTSC_SUB
NTSC_VY2
C2
VGND
R3186 1.8k 1%
R3187 2.4k 1%
C3187 1
C3186 1
R3085 2.7k 1%
R3084 2.0k 1%
R3193 75 1%
R3194 75 1%
R3195 75 1%
C3188 1
R3188 220
R3189 1k
R3190 1k
C3189
C3190
C3191 1
R3191 1k
C3193 1
R3192 1k
C3194 1000p
C3192 1000p
DTV_Y1
PB1
PR1
DTV1
DTV_L1
DTV_R1
C3185 1
C3184 16V 1
R3183 2.4k 1%
R3093 2.7k 1%
R3185 1k
R3184 1k
C3183 16V
R3182 1.8k 1%
C3182 16V 1
R3082 2.0k 1%
MAIN_Y
MAIN_PB
MAIN_PR
R3181 0
R3179 0
R3180 0
R3141 4.7k
R3142 4.7k
R3143 4.7k
C3017 0.1
L3010 10
C3014 16V 1.0
C3013 16V 100
SUB_Y
SUB_PB
SUB_PR
C3018 16V 10
R3140 4.7k
R3176 0
C3016 16V 0.1
R3139 4.7k
R3175 0
C3015 16V 0.1
R3138 4.7k
R3174 0
APD2 (ASPECT DET)
PDD2 (D3 DET)
CV/SY_M
SC_M
SY_M
VGND5
L5
R5
AGND5
SLV_ADD
CV/SY_S
SC_S
SY_S
VGND6
L6
R6
AGND6
1_VCC
SDA
SCL
Pbout1
Prout1
VGND7
Lout1
Rout1
Yout1
Yout2
V_VCC
BIAS
VGND8
Pbout2
Prout2
VGND8
L2
R2
DCOUT
Pbout3
Prout3
AGND9
Lout3
Rout3
AVCC
Yout3
VGND9
R3178 330
R3177 330
AUDIO_L
AUDIO_R
C3173 1000p
C3012 16V 0.1
80mA (HD)
L3008 10
C3011 16V 0.1
C3010 16V 100
R3161 22
R3160 22
SDA2
SCL2
R3162 220
R3163 1k
R3164 1k
R3165 1k
R3166 1k
R3167 220
R3168 1k
R3170 1k
R3172 1k
R3173 1k
C3160 1
C3161 1
C3162 1
C3163 1
C3164 1000p
C3165 1
C3166 1000p
C3167 1
C3168 1
C3170 1
C3172 1
C3174 1
C3175 1000p
R3196 75 1%
R3197 75 1%
R3198 75 1%
VGND
DTV_Y2
PB2
PR2
DTV_L2
DTV_R2
DTV2
DVI_Y
DVI_PB
DVI_PR
DVI_L
DVI_R
DVI
AGND
V4
L4
Y4
R4
C4
S4
VIDEO4
26
27
TP121
TP120
TP119
TP133
TP127
TP129
TP128
TP130
C894 35V 100
C897 25V 470
AUDIO -20V
AUDIO -20V
AUDIO GND
AUDIO GND
AUDIO +20V
AUDIO +20V
GND
STBY 5V
GND
BTL_30V
GND
GND
UNREG 23V
UNREG 23V
GND
UNREG 15V
UNREG 15V
A4
D4
TP131
12V
MOMENT B
GND
+B_ON OFF
GND
SOS
GND
V DRIVE GC
GND
V RASTER
GND
TILT
SDA2
SERVICE SW
SCL2
VD
A5
D5
TP126
TP125
TP142
TP139
TP153
TP143
TP152
TP154
TP136
MOMENT_B_SW
140V_SW
SOS
V_DRIVE
V_RASTER
TILT
SDA2
SERVICE_SW
SCL2
V.L. (NECK PRO)
GND
GND
HHS_DET
GND
480P 1080I
GND
H RASTER
GND
GND
H_DRIVE
GND
EW_DRIVE
GND
FBP
A6
D6
D505
TP155
TP158
TP156
TP140
TP137
TP141
TP138
HHS_DET
HD_SD_SW
H_RASTER
H_DRIVE
EW_DRIVE
FBP
TP151
TP149
TP148
TP147
TP157
EHT_DET
NC
H DAF
NC
V DAF
NC
ABL
HHS_REF
A7
D7
EHT_DET
H_DAF
V_DAF
ABL
HHS_REF
A23
DG3
DEFLECTION
V_DAF
ABL
HHS_REF
MOMENT_B_SW
140V_SW
SOS
V_RASTER
TILT
SERVICE_SW
V_DRIVE
H_DAF
EHT_DET
FBP
EW_DRIVE
H_DRIVE
H_RASTER
HD_SD_SW
HHS_DET


J
I
H
G
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D
C
B
A
1
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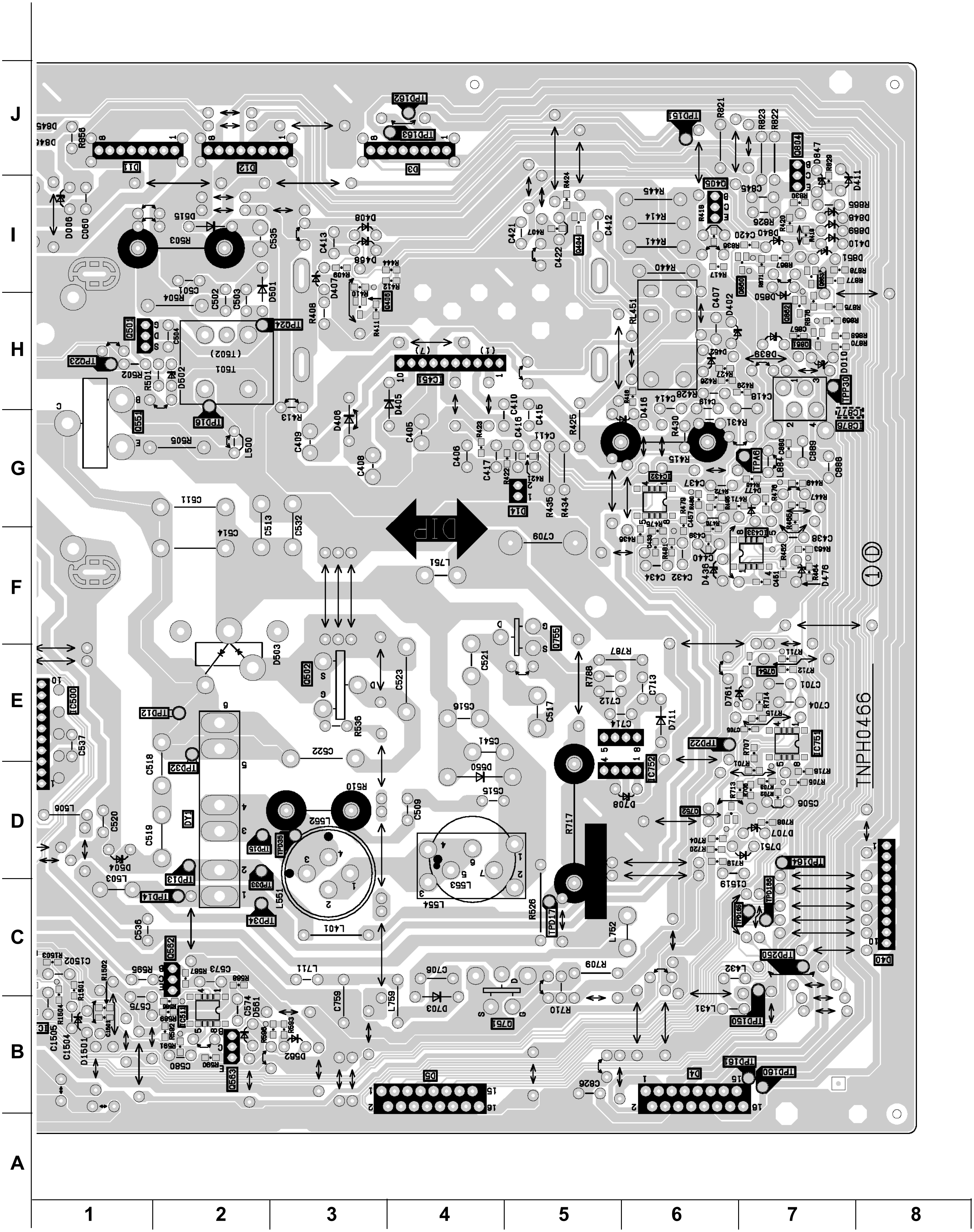
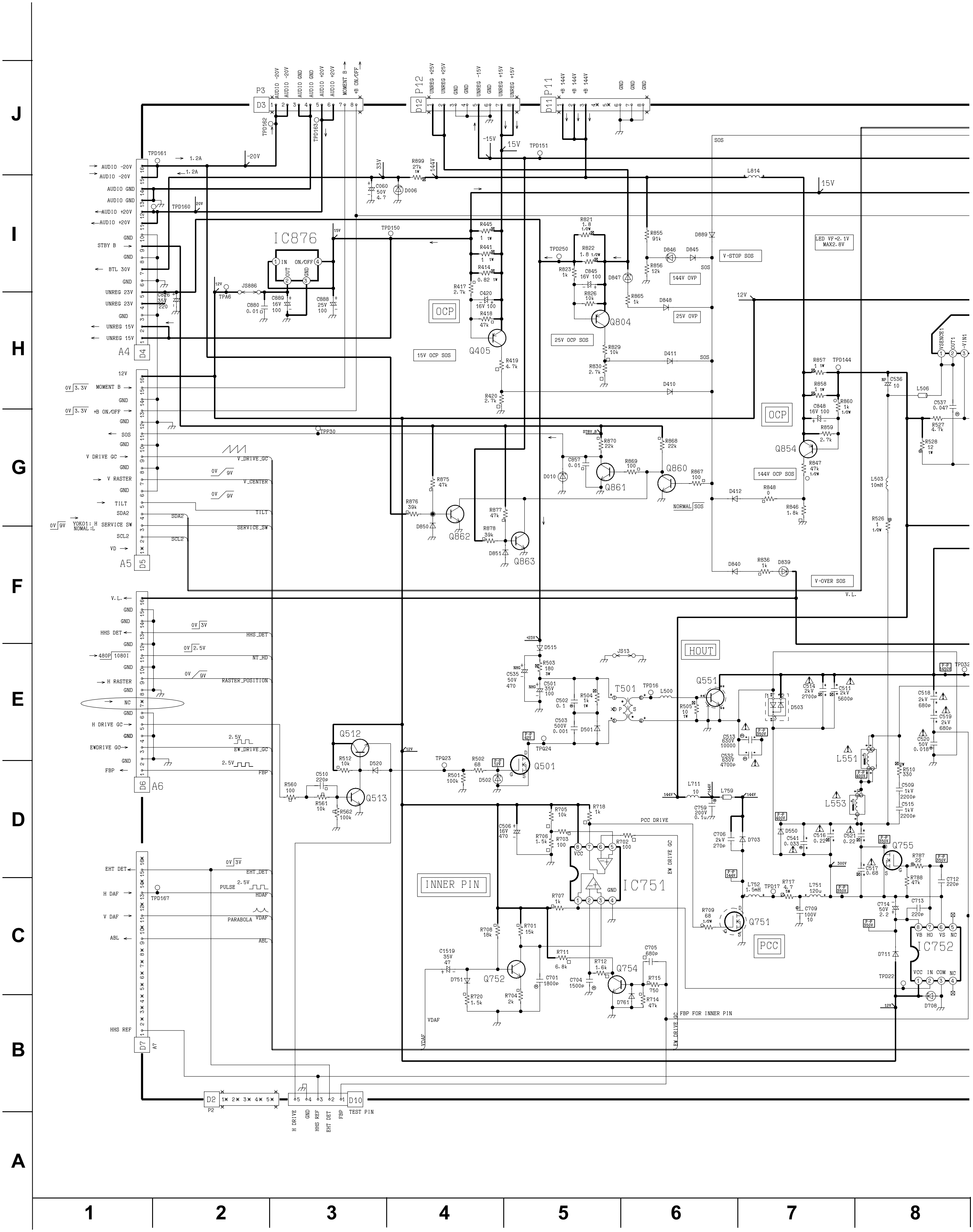
3
4
5
6
7
8
H.V. DANGER
H.V. DANGER
H.V. DANGER
HEATER
SCREEN
D16
D13
T551
T1501
T501
(T502)
DY1
IC500
IC1501
D2
D11
D12
D1
D6
D7
D10
TEST-PIN
R519
R503
R1531
R1530
R1536
L552
L551
L401
Q501
Q502
Q509
Q510
Q551
Q562
Q563
Q1501
Q1502
TPD24
TPD7
TPD144
TPD29
TPD2
TPD1
TPD6
TPD12
TPD13
TPD14
TPD16
TPD023
TPD024
TPD30
TPD19
TPD32
TPD33
TPD34
TPD35


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
D11
D12
D3
D4
D5
D40
TPD162
TPD163
TPD151
TPD24
TPD23
TPD16
TPD12
TPD32
TPD35
TPD13
TPD14
TPD15
TPD33
TPD34
TPD17
TPD22
TPD164
TPD166
TPD168
TPD250
TPD150
TPD160
TPD161
TPA6
TPD30
Q501
Q551
Q502
Q755
Q582
Q583
Q751
Q404
Q406
Q405
Q804
Q764
Q752
IC451
IC432
IC433
IC751
IC752
IC511
IC876
IC877
D14
DY1
T501
(T502)
RL451
R503
R504
R505
R536
R510
R526
R717
R787
R788
R709
R710
R445
R414
R441
R440
R428
R430
R431
R415
R425
R435
R434
R408
R413
R821
R823
R822
C501
C502
C503
C504
C535
C511
C514
C513
C532
C709
C523
C521
C516
C517
C522
C541
C515
C509
C518
C519
C520
C536
C537
C500
C573
C574
C575
C580
C706
C759
C712
C713
C714
C826
C405
C406
C408
C409
C410
C411
C412
C413
C415
C416
C417
C421
C422
C407
C414
C418
C419
C437
C438
C439
C440
C432
C434
C701
C704
C506
C1502
C1504
C1505
C1519
C845
C060
D501
D502
D503
D504
D515
D550
D561
D562
D703
D707
D708
D711
D751
D761
D405
D406
D407
D408
D468
D402
D416
D436
D476
D477
D839
D840
D850
D847
D411
D1501
D006
D010
L500
L503
L506
L551
L552
L553
L554
L401
L431
L432
L711
L751
L752
L759
DIP
TNPH0466
1D

D-BOARD 2/2 TNPH0466 CT-32HC14J/UJ


P3
D3
AUDIO -20V
AUDIO -20V
AUDIO GND
AUDIO GND
AUDIO +20V
AUDIO +20V
MOMENT B
+B ON/OFF
P12
D12
UNREG +25V
UNREG +25V
GND
GND
UNREG -15V
GND
UNREG +15V
UNREG +15V
P11
D11
+B 144V
+B 144V
+B 144V
GND
GND
GND
TPD162
TPD163
TPD161
TPD160
TPD151
TPD150
TPD250
TPD144
1.2A
-20V
15V
-15V
33V
144V
SOS
L814
R899 27k 1W
C060 50V 4.7
D006
A4
D4
STBY B
BTL 30V
UNREG 23V
UNREG 15V
C826 35V 220
IC876
IN
ON/OFF
OUT
GND
TPA6
JS886
C880 0.01
C889 16V 100
C888 25V 100
OCP
R445 1 1W
R441 1 1W
R414 0.82 1W
R417 2.7k
C420 16V 100
R418 47k
Q405
R419 4.7k
R420 2.7k
15V OCP SOS
R821 1.8 1/2W
R822 1.8 1/2W
R823 1k
C845 16V 100
R826 10k
Q804
R829 10k
R830 2.7k
25V OCP SOS
R855 91k
R856 12k
D889
D846
D845
D847
R865 1k
D848
D411
D410
144V OVP
25V OVP
V-STOP SOS
LED VF=2.1V MAX2.6V
12V
A5
D5
MOMENT B
+B ON/OFF
V DRIVE GC
V RASTER
TILT
SDA2
SERVICE SW
SCL2
VD
YOKO1: H NOMAL: L
V_DRIVE_GC
V_CENTER
SERVICE_SW
TPP30
R875 47k
R876 39k
D850
Q862
R877 47k
R878 39k
D851
Q863
STBY_B
D010
C857 0.01
R870 22k
Q861
R869 100
R868 22k
Q860
R867 100
NORMAL SOS
OCP
R857 1 1W
R858 1 1W
C848 16V 100
R859 2.7k
R860 1k 1/2W
Q854
R847 47k 1/2W
144V OCP SOS
D412
R848 0
R846 1.8k
D840
R836 1k
D839
V-OVER SOS
V.L.
C536 10
L506
C537 0.047
R527 4.7k
R528 12 1W
L503 10mH
R526 1 1/2W
VSENCE1
OUT1
-VIN1
A6
D6
HHS DET
480P 1080I
H RASTER
NC
H DRIVE GC
EWDRIVE GC
FBP
HHS_DET
NT_HD
RASTER_POSITION
EW_DRIVE_GC
+23V
D515
R503 180 3W
C535 50V 470
C501 35V 100
JS13
C502 0.1
R504 1k 1W
C503 500V 0.001
D501
T501
TPD16
L500
HOUT
Q551
R505 10 1W
C513 630V 10000
C532 630V 4700p
C514 2kV 2700p
C511 2kV 5600p
D503
TPD32
C518 2kV 680p
C519 2kV 680p
C520 50V 0.018
L551
R510 330
C509 1kV 2200p
C515 1kV 2200p
L553
Q512
R512 10k
D520
TPQ23
R502 68
Q501
R501 100k
D502
TPQ24
R560 100
C510 220p
R561 10k
R562 100k
Q513
L711 10
L759
C759 200V 0.1u
144V
R705 10k
R718 1k
C506 16V 470
R706 1.5k
R703 100
R702 100
PCC DRIVE
EW DRIVE GC
IC751
VCC
GND
C706 2kV 270p
D703
D550
C541 0.033
C516 0.22
C521 0.22
Q755
300V
C517 0.68
R787 22
R788 47k
C712 220p
L752 1.5mH
TPD17
R717 4.7 5W
L751 120u
C709 100V 10
C713 220p
C714 50V 2.2
R709 68 1/2W
Q751
PCC
IC752
VB
HD
VS
NC
VCC
IN
COM
D711
TPD22
D708
INNER PIN
R707 1k
R708 18k
R701 15k
R711 6.8k
R712 1.6k
C705 680p
R715 750
R714 47k
D761
Q754
C704 1500p
C701 1800p
R704 2k
Q752
C1519 35V 47
D751
R720 1.5k
VDAF
FBP FOR INNER PIN
EW DRIVE GC
EHT DET
H DAF
V DAF
ABL
HHS REF
TPD167
PULSE
PARABOLA
HDAF
A7
D7
D2
P2
D10
TEST PIN
H DRIVE
GND
HHS REF
EHT DET
FBP
P-P 350V
P-P 400V
P-P 144V
P-P 42V
P-P 12V
P-P 1450V
J
I
H
G
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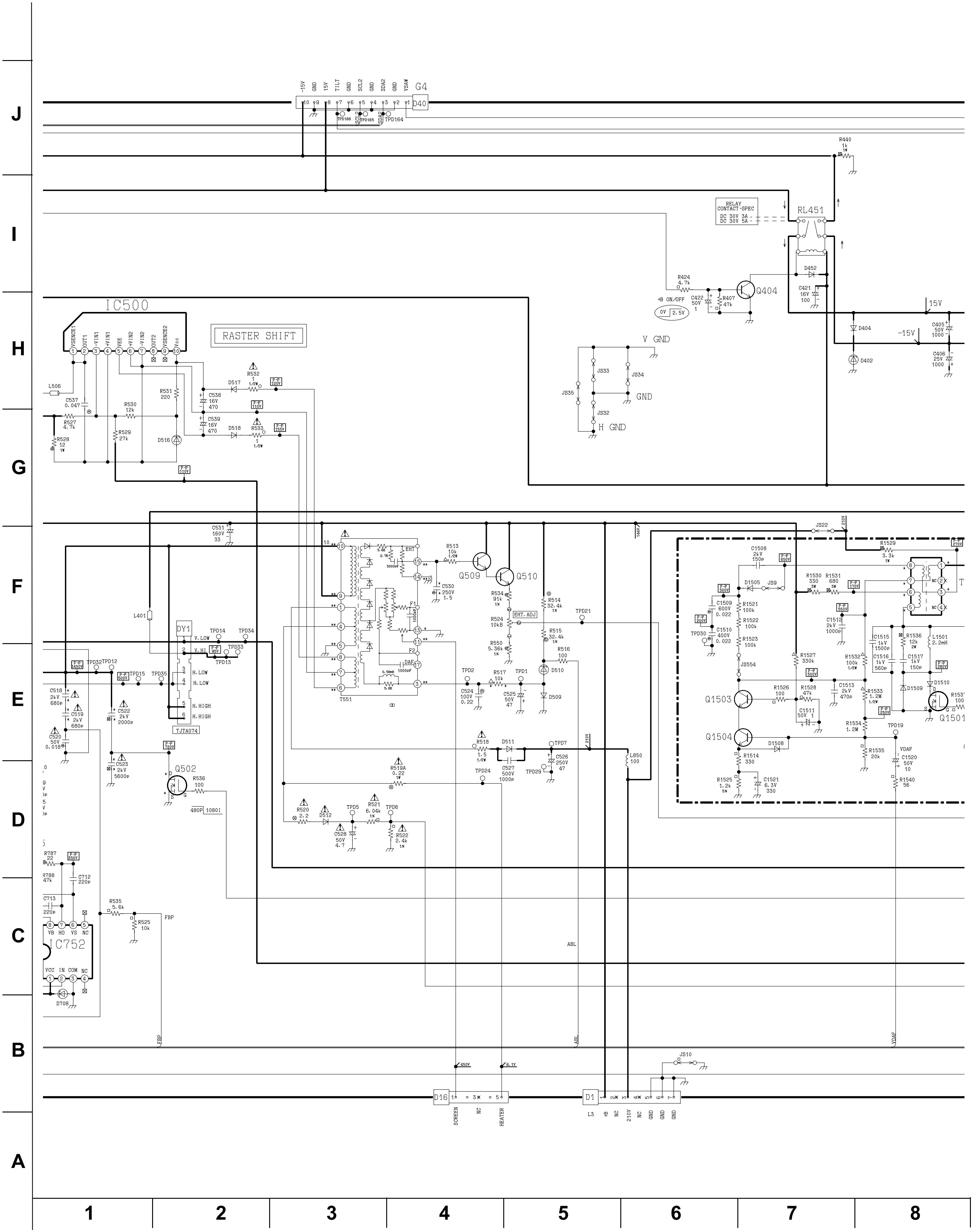
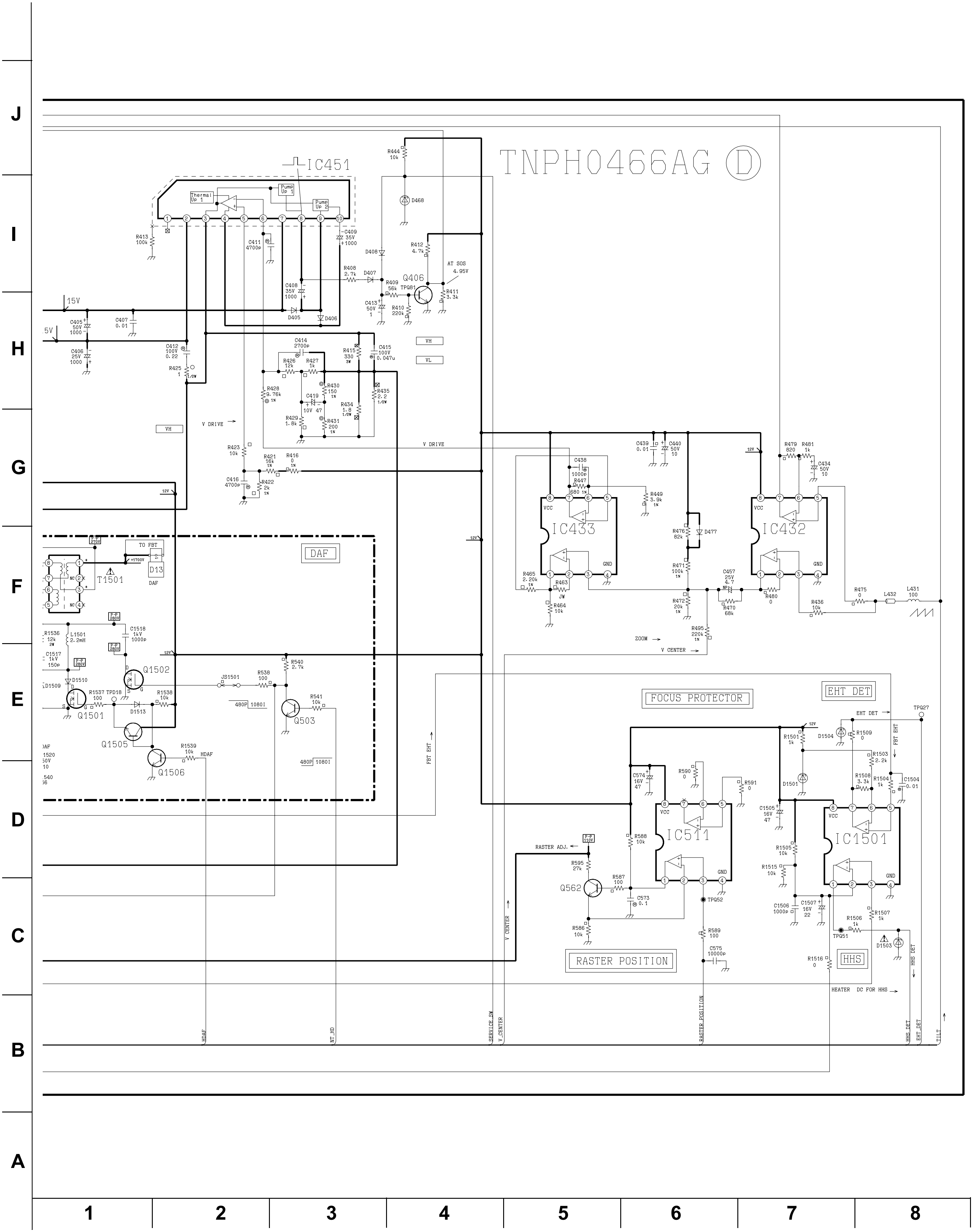
D-BOARD 1/3 TNPH0466AG CT-32HC14J/UJ


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
G4
D40
-15V
GND
15V
TILT
GND
SCL2
GND
SDA2
GND
VSAW
TPD166
TPD165
TPD164
R440 1k
RELAY CONTACT-SPEC
DC 30V 3A
DC 30V 5A
RL451
D452
C421 16V 100
Q404
R424 4.7k
C422 50V 1
R407 47k
+B ON/OFF
0V 2.5V
15V
-15V
D404
D402
C405 50V 1000
C406 25V 1000
V GND
GND
H GND
JS33
JS34
JS35
JS32
IC500
RASTER SHIFT
VSENCE1
OUT1
-VIN1
+VIN1
VEE
+VIN2
-VIN2
OUT2
VSENCE2
Vcc
L506
C537 0.047
R527 4.7k
R528 12 1W
R530 12k
R529 27k
R531 220
D516
C538 16V 470
C539 16V 470
D517
D518
R532 1 1/2W
R533 1 1/2W
P-P 120V
P-P 110V
P-P 155V
P-P 110V
C531 160V 33
L401
DY1
V.LOW
V.HI
TPD14
TPD34
TPD33
TPD13
P-P 95V
H.LOW
H.LOW
H.HIGH
H.HIGH
TJTA074
TPD32
TPD12
TPD15
TPD35
P-P 1450V
P-P 500V
C518 2kV 680P
C519 2kV 680P
C520 50V 0.018
C522 2kV 2000P
C523 2kV 5600P
P-P 720V
Q502
R536 100
480P 1080I
T551
EHT
F1
F2
DAF
0.56mH
5.6K
2.7K
3000pF
1000pF
R513 10k 1/2W
Q509
Q510
C530 250V 1.5
R534 91k 1%
R524 10kB
EHT.ADJ
R550 5.36k 1%
R514 32.4k 1%
R515 32.4k 1%
R516 100
TPD21
D510
D509
TPD2
C524 100V 0.22
R517 10k
TPD1
C525 50V 47
R518 1.5 1/2W
D511
TPD7
C527 500V 1000P
C526 250V 47
TPD29
TPD24
R519A 0.22 1W
210V
L850 100
R520 2.2
D512
TPD5
C528 50V 4.7
R521 6.04k 1%
TPD6
R522 2.4k 1%
144V
JS22
210V
R1529 3.3k 1W
P-P 270V
C1508 2kV 150P
P-P 650V
D1505
JS9
R1530 330 3W
R1531 680 3W
P-P 170V
P-P 500V
C1509 600V 0.022
P-P 200V
C1510 400V 0.022
TPD30
R1521 100k
R1522 100k
R1523 100k
JS554
R1527 330k
P-P 550V
C1512 2kV 1000P
R1532 100k 1/2W
C1515 1kV 1500P
R1536 12k 2W
L1501 2.2mH
C1516 1kV 560P
C1517 1kV 150P
P-P 280V
D1510
D1509
R1537 100
Q1501
P-P 500V
C1513 2kV 470P
R1533 1.2M 1/2W
P-P 250V
Q1503
R1526 100
R1528 47k
C1511 50V 1
Q1504
D1508
R1534 1.2M
TPD19
R1535 20k
VDAF
C1520 50V 10
R1540 56
R1514 330
R1525 1.2k 5%
C1521 6.3V 330
R787 22
P-P 350V
R788 47k
C712 220P
C713 220P
VB
HO
VS
NC
IC752
VCC
IN
COM
NC
D708
R535 5.6k
R525 10k
FBP
ABL
FBP
ABL
VDAF
450V
6.1V
JS10
D16
SCREEN
NC
HEATER
D1
L3
+B
NC
210V
NC
GND
GND
GND



TNPH0466AG D
IC451
Thermal Up 1
Pump Up 1
Pump Up 2
R413 100k
C409 35V 1000
C411 4700p
R444 10k
D468
D408
R412 4.7k
AT SOS 4.95V
Q406
R411 3.3k
R408 2.7k
D407
R409 56k
TPQ81
C408 35V 1000
C413 50V 1
R410 220k
D405
D406
15V
C405 50V 1000
C407 0.01
C406 25V 1000
C412 100V 0.22
R425 1 1/2W
C414 2700p
R426 12k
R427 1k
R415 330 3W
C415 100V 0.047u
VH
VL
R428 9.76k 1%
R430 150 1%
C419 10V 47
R434 1.8 1/2W
R435 2.2 1/2W
R429 1.8k
R431 200 1%
V DRIVE
R423 10k
R421 16k 1%
R416 0 1%
C416 4700p
R422 2k 1%
12V
C439 0.01
C440 50V 10
C438 1000p
R447 680 1%
R449 3.9k 1%
IC433
VCC
GND
R476 82k
D477
R471 100k 1%
R472 20k 1%
C457 25V 4.7 NP
R470 68k
R465 2.20k 1%
R463 JW
R464 10k
R495 220k
ZOOM
V CENTER
R479 820
R481 1k
C434 50V 10
IC432
R480 0
R475 0
L432
L431 100
R436 10k
DAF
T1501
TO FBT
+1700V
D13
P-P 270V
P-P 280V
R1536 12k 2W
L1501 2.2mH
C1518 1kV 1000p
C1517 1kV 150p
D1510
D1509
Q1502
Q1501
R1537 100
TPD18
D1513
R1538 10k
Q1505
Q1506
R1539 10k
HDAF
JS1501
R538 100
R540 2.7k
R541 10k
Q503
480P 1080I
FBT EHT
FOCUS PROTECTOR
EHT DET
TPQ27
R1501 1k
D1504
R1509 0
R1503 2.2k
R1508 3.3k
R1504 1k
C1504 0.01
D1501
C574 16V 47
R590 0
R591 0
IC511
C1505 16V 47
IC1501
RASTER ADJ.
P-P 110V
R588 10k
R595 27k
Q562
R587 100
C573 0.1
TPQ52
R586 10k
R589 100
C575 10000p
RASTER POSITION
R1505 10k
R1515 10k
C1506 1000p
C1507 16V 22
R1506 1k
R1507 1k
TPQ51
D1503
R1516 0
HHS
HEATER
DC FOR HHS
HHS DET
V CENTER
SERVICE_SW
V_CENTER
NT_HD
RASTER_POSITION
HHS_DET
EHT_DET
TILT
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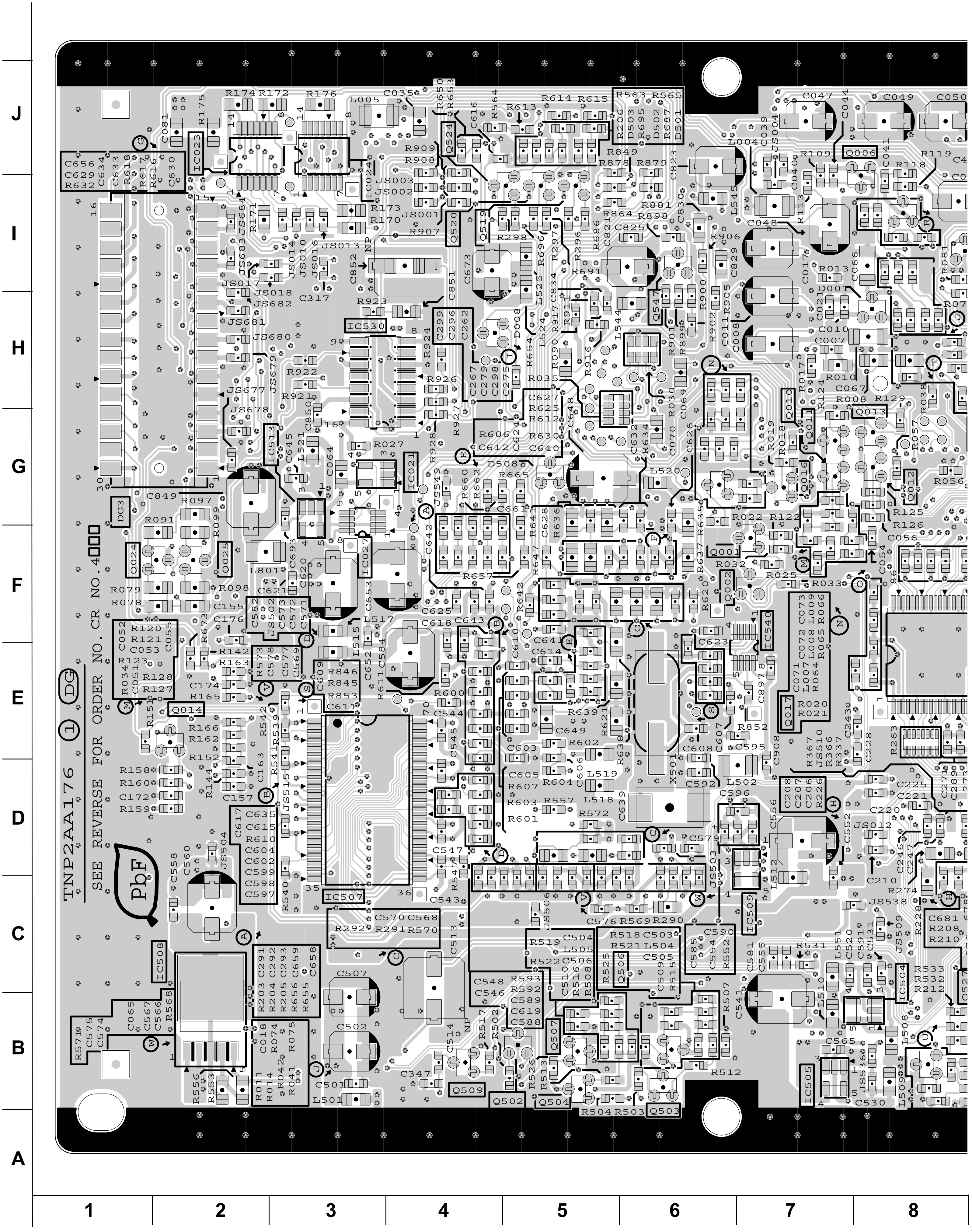

TNP2AA176 ① DG
SEE REVERSE FOR ORDER NO. CR NO.4
PbF
DG3
J
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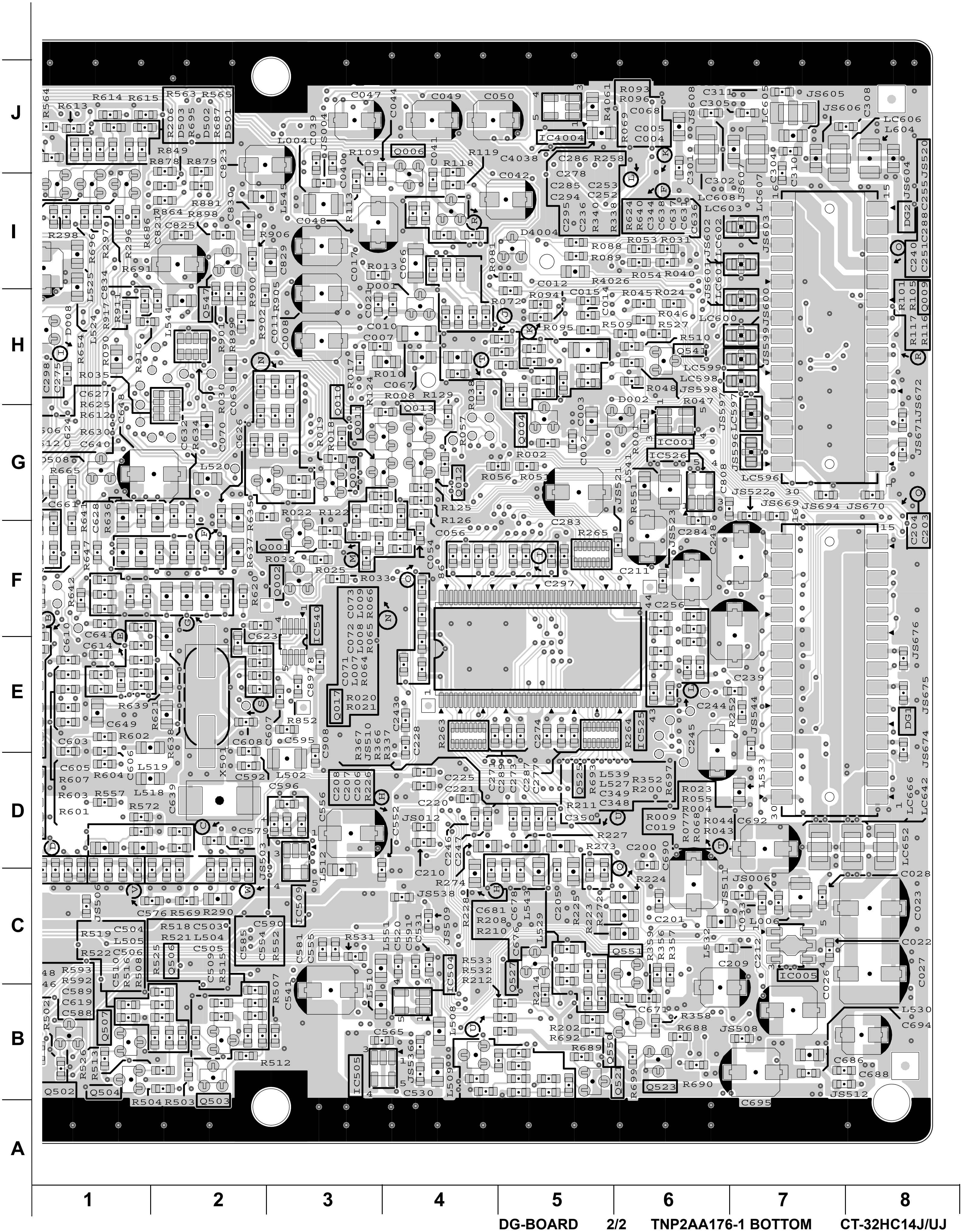
DG-BOARD 1/2 TNP2AA176-1 BOTTOM CT-32HC14J/UJ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R613
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R615
R563
R565
R206
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R695
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R687
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C049
C050
C039
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C278
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C294
C252
C295
C236
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JS605
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C308
LC606
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JS520
C301
C302
JS607
LC608
LC603
LC607
C304
C310
JS604
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C288
DG2
C240
C251
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C344
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C834
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R654
R090
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R902
R905
C011
C008
Q547
R901
R899
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R013
C066
D001
C021
C010
C007
R081
D4004
R088
R089
R053
R031
R054
R040
R4026
C012
R094
C015
C014
R045
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R072
R095
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JS602
LC602
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LC601
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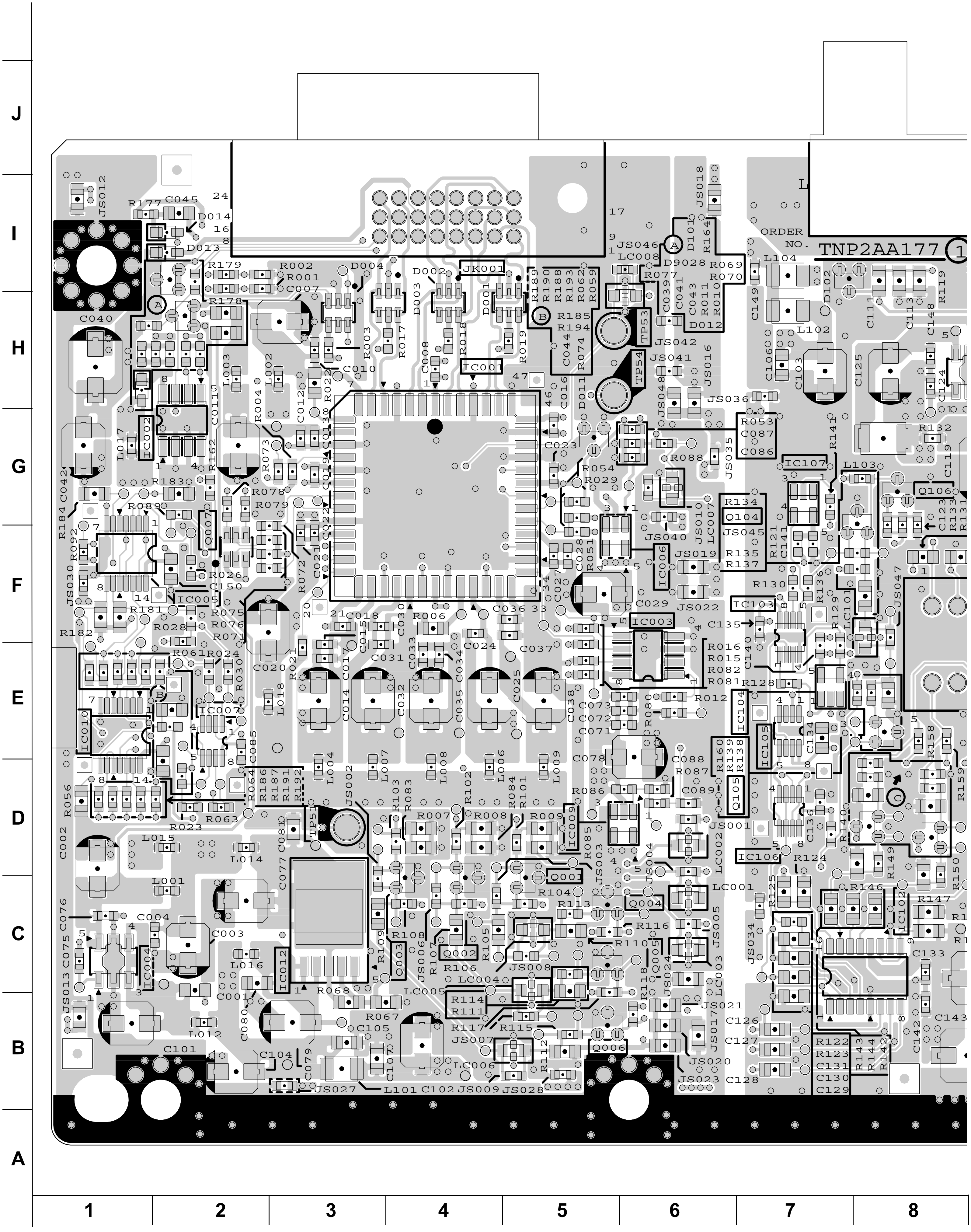
DG-BOARD 2/2 TNP2AA176-1 BOTTOM CT-32HC14J/UJ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R177
C045
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D013
24
16
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17
9
1
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R077
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R119
R179
R002
R001
C007
D004
D002
JK001
D003
D001
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R190
R188
R193
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R017
R018
R019
C008
IC001
C010
R022
L003
L002
JS042
JS041
JS016
C106
C103
C125
C124
47
46
C016
D011
TP54
JS048
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C012
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R079
R054
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C123
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R071
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C031
C017
C014
C032
C035
C025
C020
R021
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C071
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IC007
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C078
C088
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R160
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L004
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L008
L006
L009
R159
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R084
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R086
C089
R056
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R187
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R192
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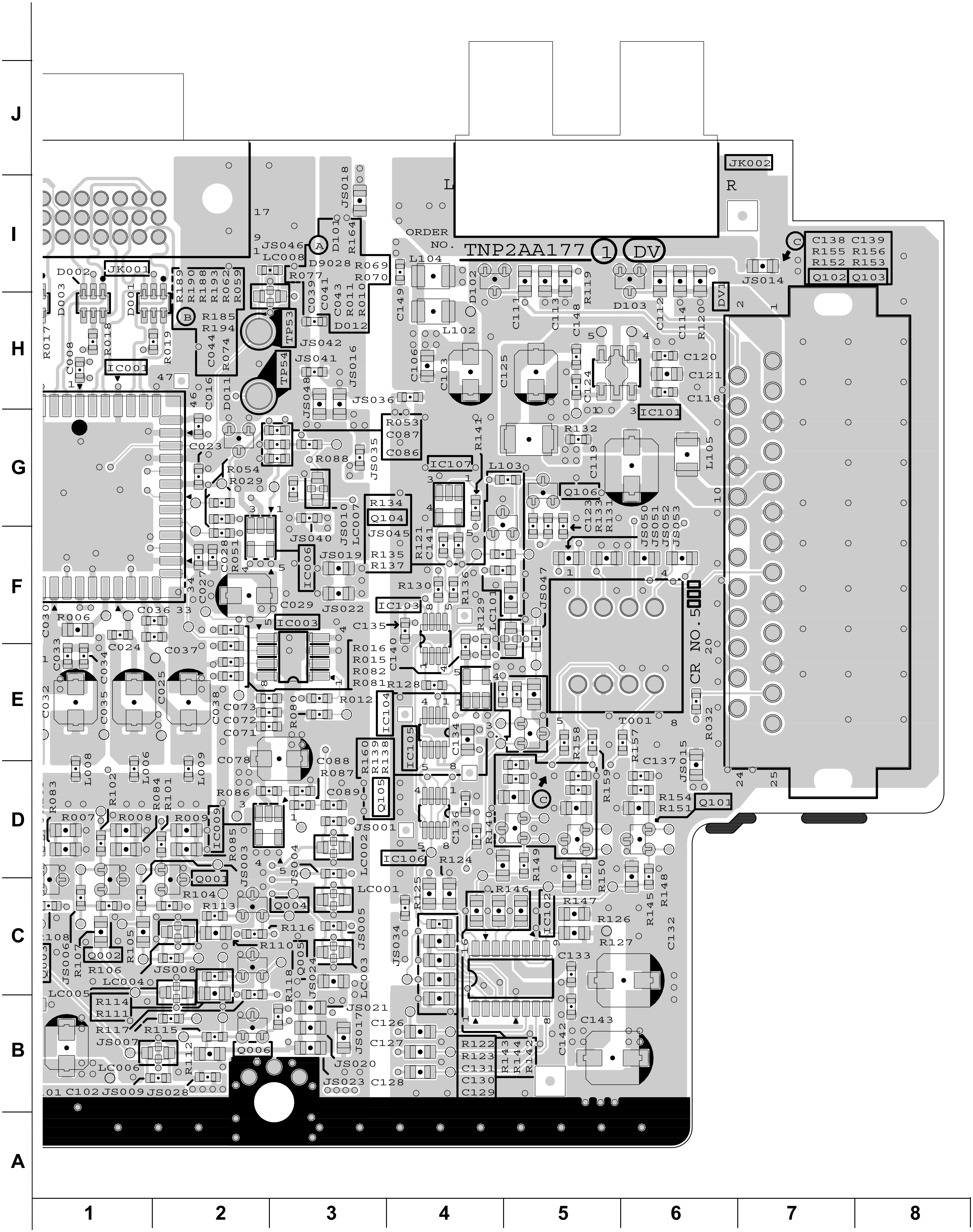
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JK002
L
R
ORDER
NO.
TNP2AA177
1
DV
JK001
IC001
IC003
IC006
IC009
IC101
IC102
IC103
IC104
IC105
IC106
IC107
Q001
Q002
Q004
Q006
Q101
Q102
Q103
Q104
Q105
Q106
TP53
TP54
T001
DV1
CR NO.5
C138 C139
R155 R156
R152 R153
JS014
L102
L103
L104
L105
D101
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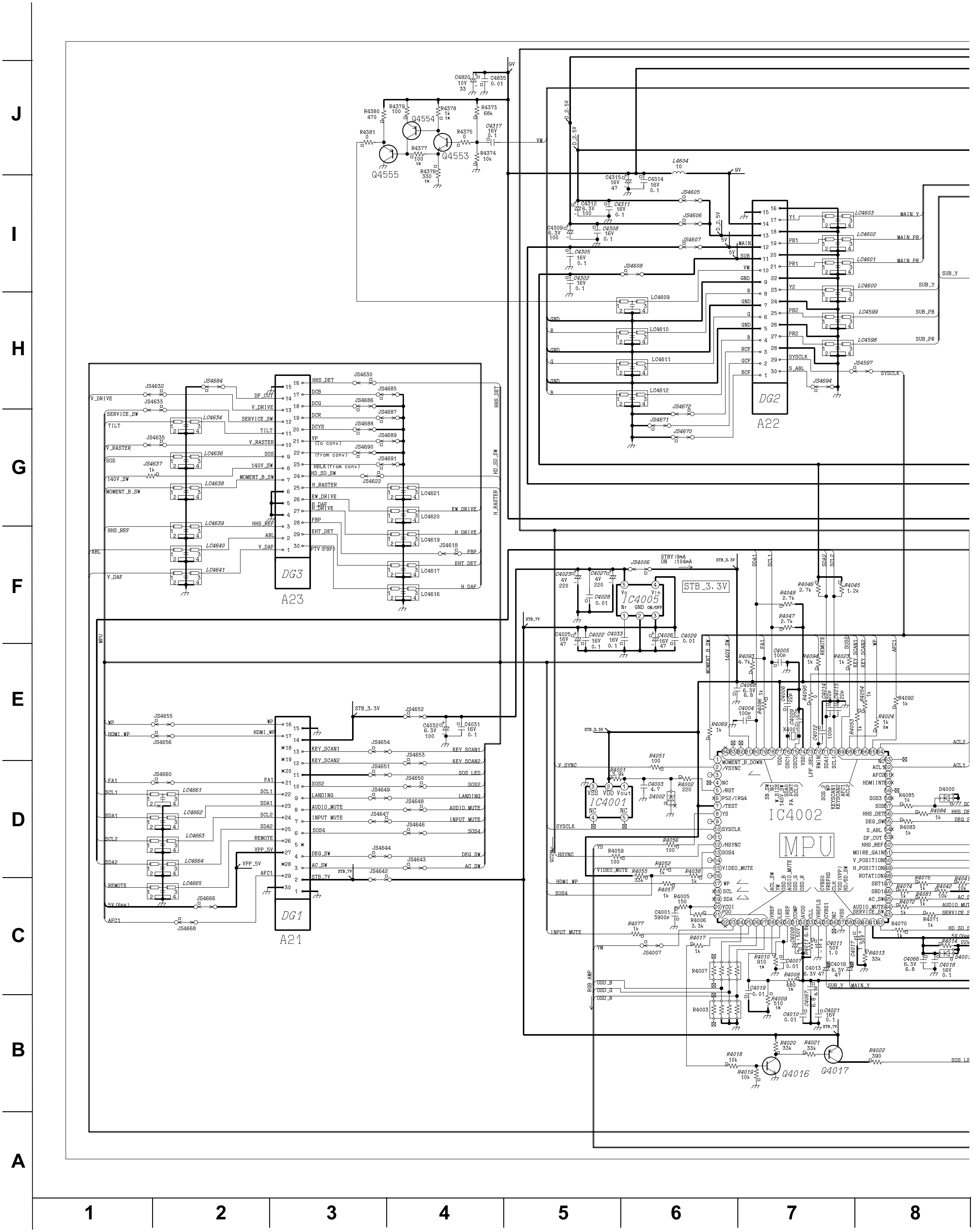
DV-BOARD 2/2 TNP2AA177-1 TOP CT-32HC14J/UJ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7
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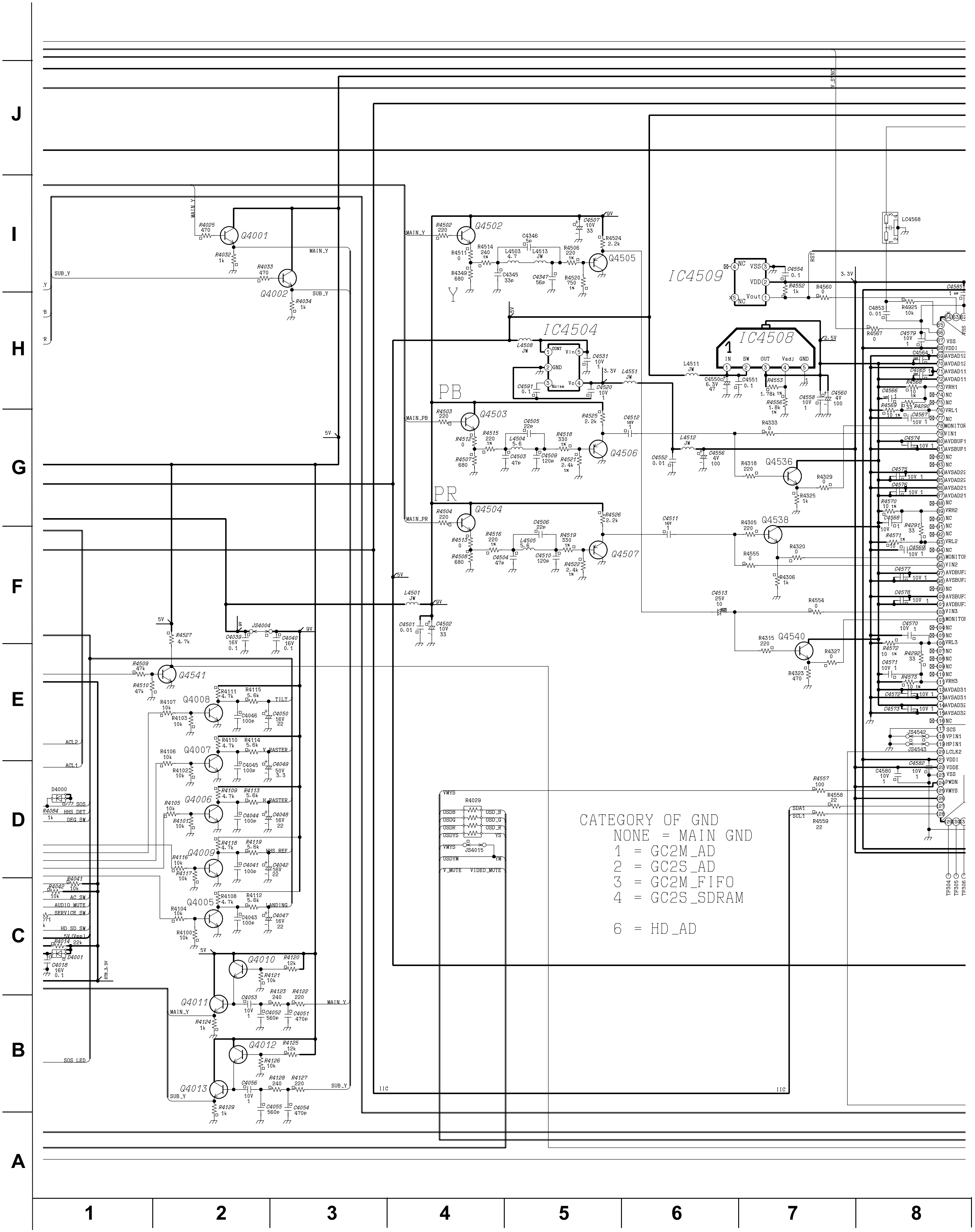
Q4554
Q4553
9V
VM
D_2.5V
L4604
DG2
A22
DG3
A23
DG1
A21
IC4005
STB_3.3V
STBY:9mA
ON :104mA
IC4001
IC4002
MPU
Q4016
Q4017
MAIN_Y
MAIN_PB
MAIN_PR
SUB_Y
SUB_PB
SUB_PR
SYSCLK
V_DRIVE
SERVICE_SW
TILT
V_RASTER
SOS
140V_SW
MOMENT_B_SW
HHS_REF
ABL
V_DAF
HHS_DET
HD_SD_SW
H_RASTER
EW_DRIVE
H_DRIVE
FBP
EHT_DET
H_DAF
WP
HDMI_WP
KEY_SCAN1
KEY_SCAN2
SOS_LED
SOS2
LANDING
AUDIO_MUTE
INPUT_MUTE
SOS4
DEG_SW
AC_SW
STB_7V
FA1
SCL1
SDA1
SCL2
SDA2
REMOTE
VPP_5V
AFC1
5V(Vpp)
V_SYNC
HSYNC
VIDEO_MUTE
RGB_AMP
OSD_B
OSD_G
OSD_R
YM
SOS_LED

DG-BOARD 1/5 TNP2AA176 CT-32HC14J/UJ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Q4001
Q4002
R4025 470
R4032 1k
R4033 470
R4034 1k
MAIN_Y
SUB_Y
Q4502
Q4503
Q4504
Q4505
Q4506
Q4507
Y
PB
PR
MAIN_PB
MAIN_PR
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Vin
GND
Noise
Vo
IC4508
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SW
OUT
Vadj
GND
IC4509
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VSS
VDD
Vout
LC4568
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H_RASTER
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D4001
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ACL1
AC_SW
AUDIO_MUTE
SERVICE_SW
HD_SD_SW
5V(Vpp)
STB_3.3V
SOS_LED
VMYS
OSDB
OSDG
OSDR
OSDYS
OSDYM
V_MUTE
VIDEO_MUTE
OSD_B
OSD_G
OSD_R
YS
YM
IIC
SDA1
SCL1
V_SYNC
RST
3.3V
5V
9V
2.5V
VSS
VDDI
AVSAD12
AVDAD12
AVSAD11
AVDAD11
VRH1
VRL1
MONITOR
VIN1
AVDBUF1
AVSBUF1
AVSAD22
AVDAD22
AVSAD21
AVDAD21
VRH2
VRL2
VIN2
VIN3
VRL3
VRH3
AVDAD31
AVSAD31
AVDAD32
AVSAD32
SCS
VPIN1
HPIN1
LCLK2
VDDE
PWDN
JS4542
JS4543
TP304
TP305
TP306

CATEGORY OF GND
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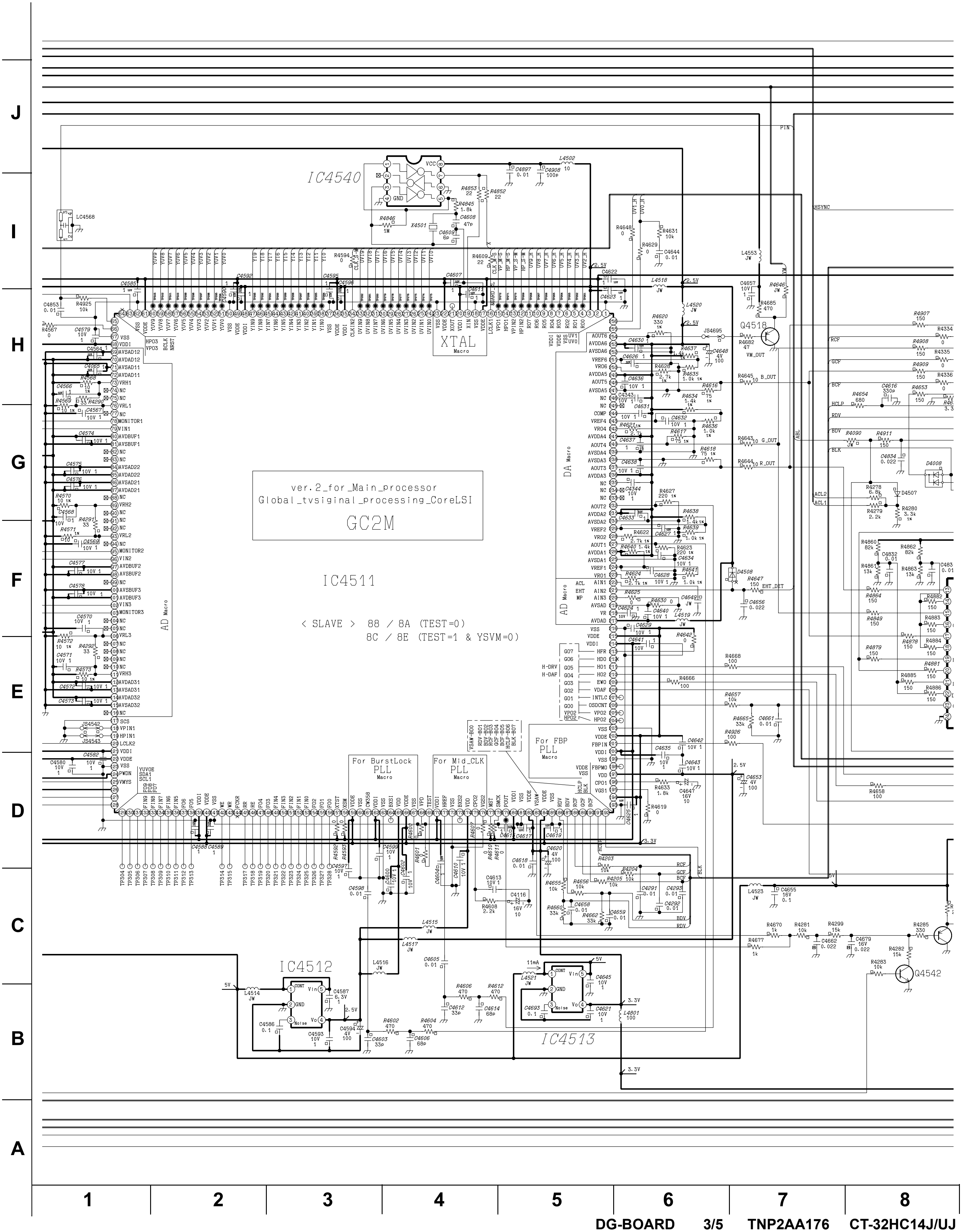
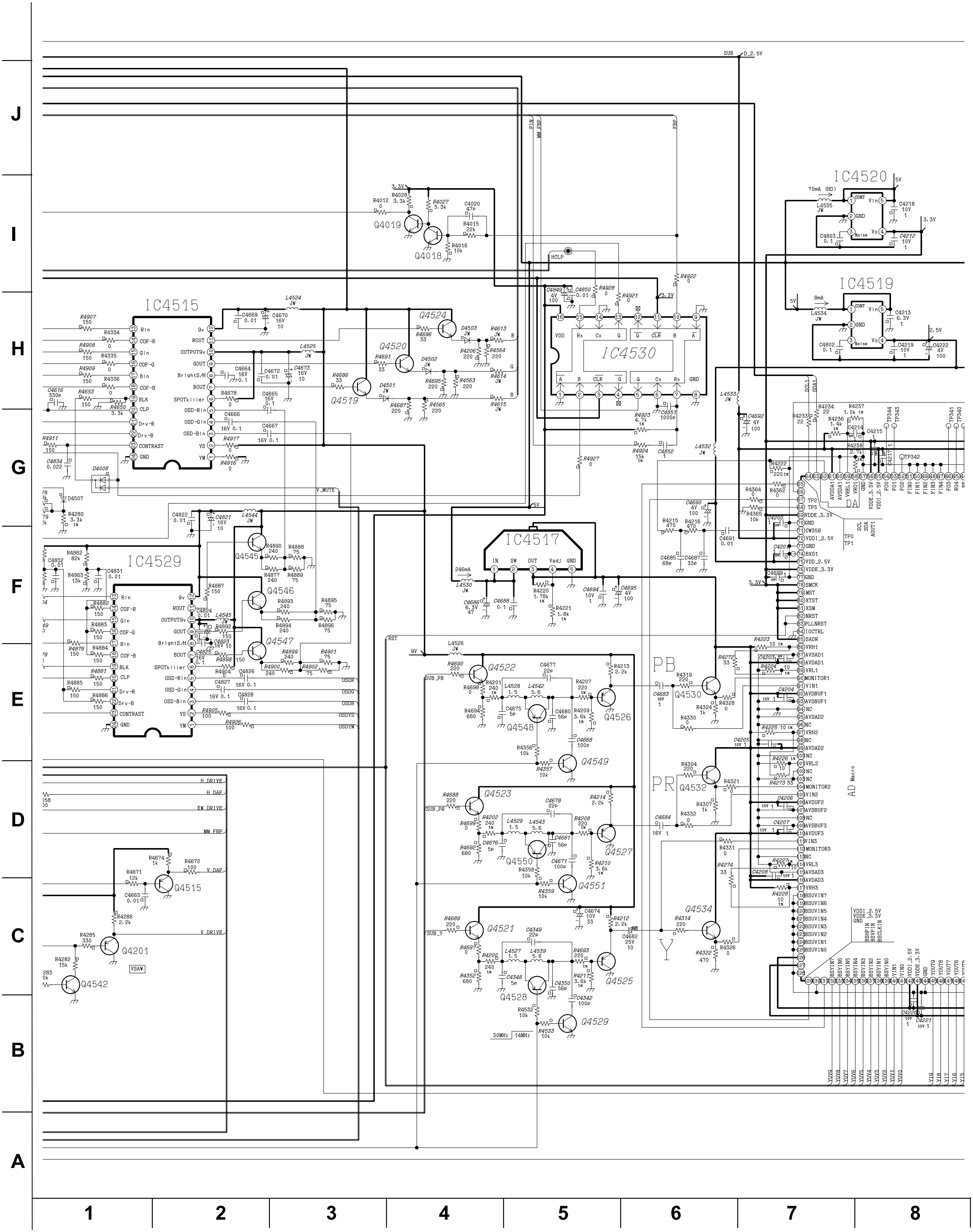
2 = GC2S_AD
3 = GC2M_FIFO
4 = GC2S_SDRAM

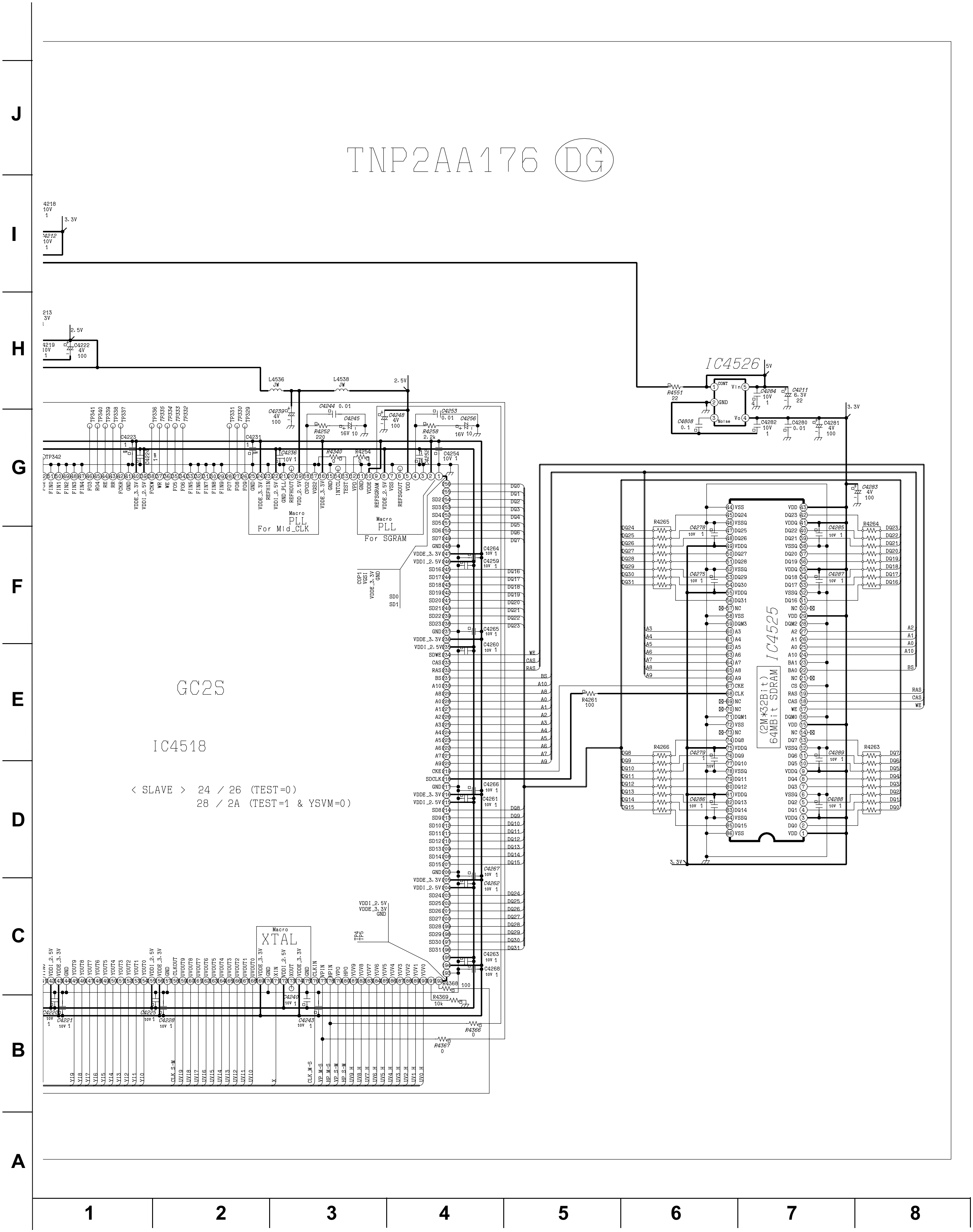
6 = HD_AD

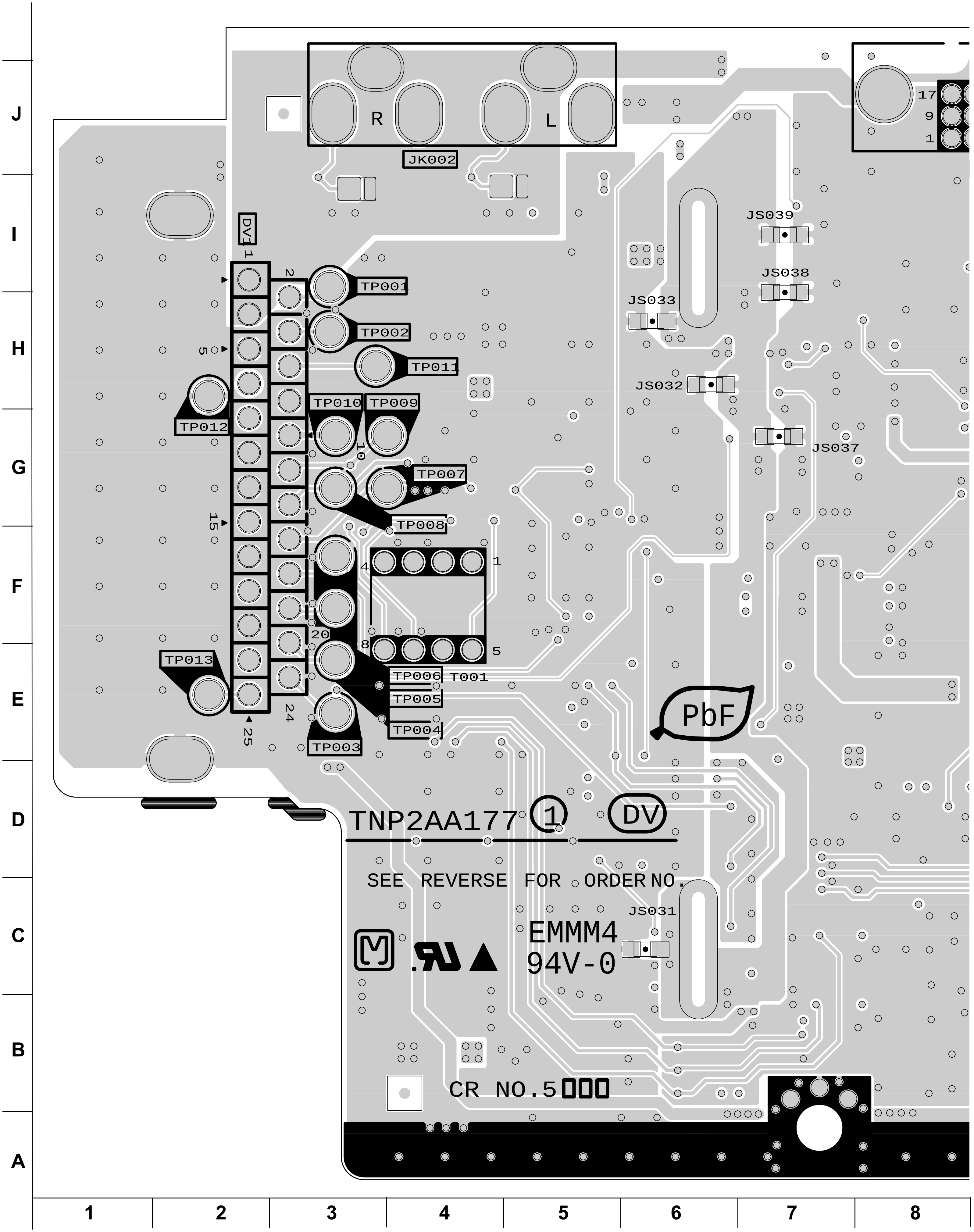

IC4540
IC4511
ver.2_for_Main_processor
Global_tvsiginal_processing_CoreLSI
GC2M
< SLAVE > 88 / 8A (TEST=0)
8C / 8E (TEST=1 & YSVM=0)
XTAL Macro
DA Macro
AD Macro
For BurstLock PLL Macro
For Mid_CLK PLL Macro
For FBP PLL Macro
IC4512
IC4513
Q4518
Q4542
LC4568
D4508
D4507
D4008
PIN
HSYNC
VM_OUT
B_OUT
G_OUT
R_OUT
EHT_DET
ABL
RCF
GCF
BCF
HCLP
RDV
BDV
BLK
ACL2
ACL1
H-DRV
H-DAF
5V
3.3V
2.5V
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

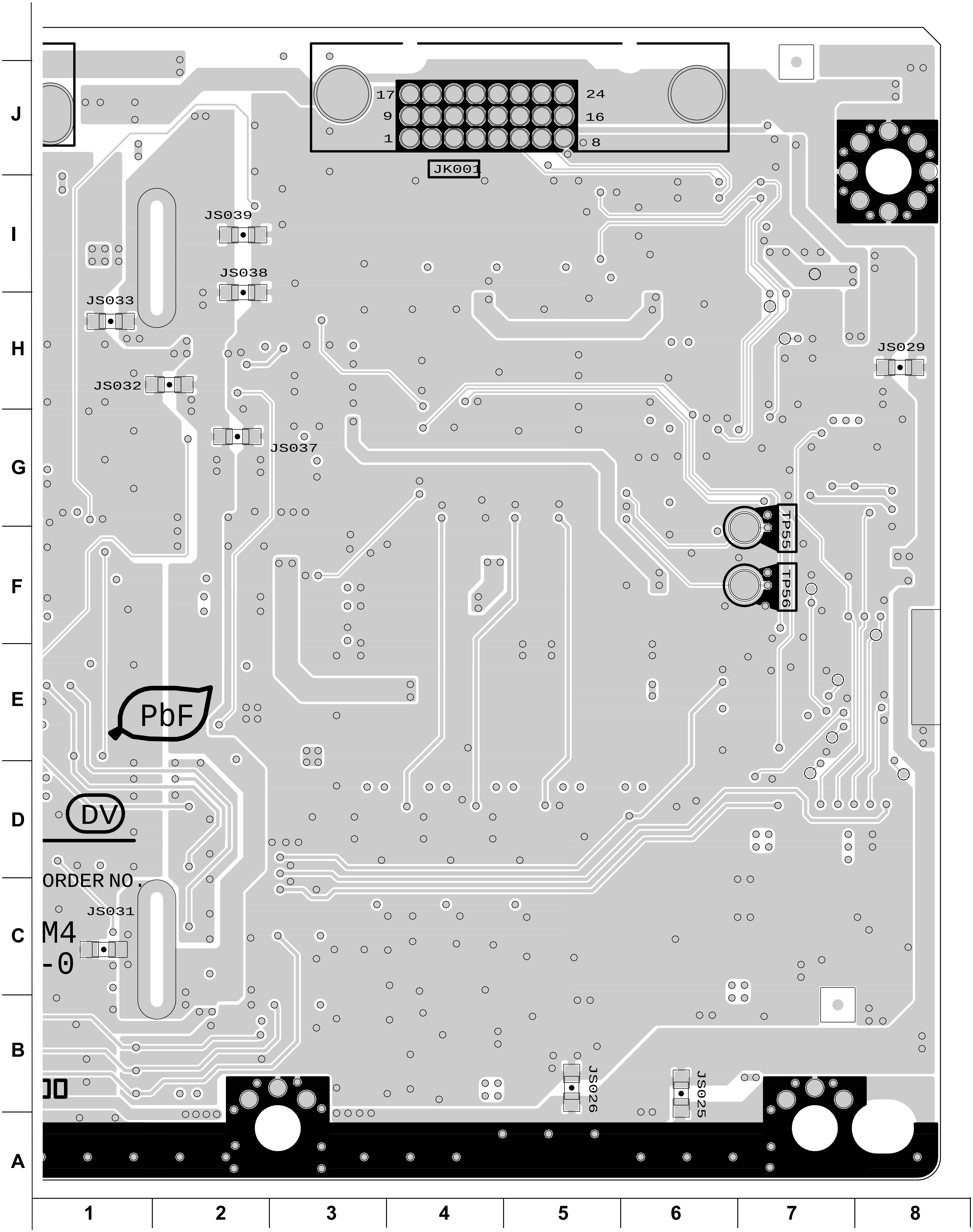


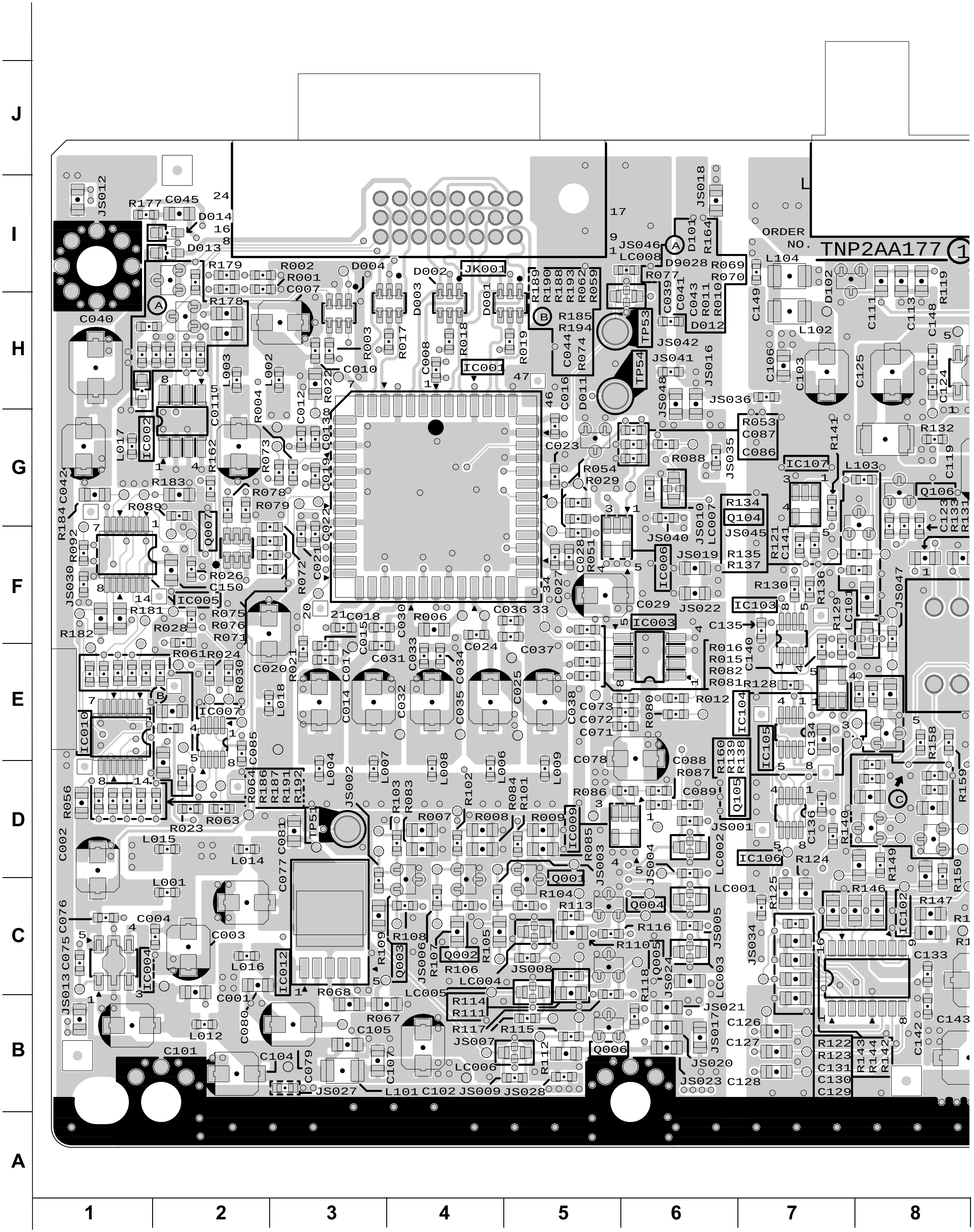
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
SUB D_2.5V
PIN
MM_FBP
FBP
3.3V
R4012 0
R4028 3.3k
R4027 3.3k
C4020 47p
R4015 22k
R4016 10k
Q4019
Q4018
HCLP
IC4520
70mA (HD)
L4535 JW
CONT
Vin
GND
Noise
Vo
C4218 10V 1
C4803 0.1
C4212 10V 1
5V
IC4519
8mA
L4534 JW
C4213 6.3V 1
C4802 0.1
C4219 10V 1
C4222 4V 100
2.5V
R4922 0
IC4515
R4907 150
R4334 0
R4908 150
R4335 0
R4909 150
R4336 0
C4616 330P
R4653 150
R4650 3.3k
R4911 150
C4834 0.022
Rin
COF-R
Gin
COF-G
Bin
COF-B
BLK
CLP
Drv-R
Drv-B
CONTRAST
GND
9v
ROUT
OUTPUT9v
GOUT
BrightS/H
BOUT
SPOTkiller
OSD-Rin
OSD-Gin
OSD-Bin
YS
YM
C4669 0.01
C4670 16V 10
L4524 JW
L4525 JW
C4664 16V 0.1
C4672 0.01
C4673 16V 10
R4678 0
C4665 16V 0.1
C4666 16V 0.1
C4667 16V 0.1
R4917 0
R4916 0
Q4524
Q4520
Q4519
R4696 33
D4503 JW
R4613 JW
R4206 220
R4564 220
R4691 33
D4502 JW
R4614 JW
R4686 33
R4695 220
R4563 220
D4501 JW
R4687 220
R4565 220
R4615 JW
R
G
B
C4849 4V 100
C4850 0.01
R4928 0
R4921 0
IC4530
VDD
Rx
Cx
Q
CLR
A
R4923 4.7k
C4851 1000p
R4924 15k
C4852 1
R4927 0
L4533 JW
C4692 4V 100
L4532 JW
SCL1
SDA1
R4233 22
R4234 22
R4237 1.0k
R4236 1.4k
C4214
C4215 1
TP344
TP343
TP341
TP340
R4238 2.7k
C4217 1
TP342
R4222 220
R4362 0
R4364 0
R4365 10k
C4690 4V 100
C4200 1
R4215 470
R4216 470
C4691 0.01
C4685 68p
C4687 33p
C4201
C4699 1
DA
SCL
SDA
AOUT1
TP0
TP1
AVDDA1
AVSDA1
VREL1
VRO1
GND
VDDE_3.3V
VDDI_2.5V
FO0
FO1
FO2
FIN0
FIN1
FIN2
FIN3
FIN4
FO3
RO4
TP2
TP3
VDDE_3.3V
GND
CW358
GND
VDDI_2.5V
GND
BXS1
VDD_2.5V
VDDE_3.3V
GND
SMCK
MST
XTST
XSM
NRST
PLLNRST
IOCTRL
SADR
VRH1
AVSAD1
AVDAD1
VRL1
MONITOR1
VIN1
AVDBUF1
AVSBUF1
NC
AVSAD2
NC
VRH2
NC
AVDAD2
NC
VRL2
NC
NC
MONITOR2
VIN2
AVDUF2
AVSBUF2
NC
AVSBUF3
AVDUF3
VIN3
MONITOR3
NC
VRL3
AVSAD3
AVDAD3
VRH3
BSUVIN7
BSUVIN6
BSUVIN5
BSUVIN4
BSUVIN3
BSUVIN2
BSUVIN1
BSUVIN0
AD Macro
VDDI_2.5V
VDDE_3.3V
GND
BSHPIN
BSVPIN
BSCLKIN
D4008
D4507
R4280 3.3k
V_MUTE
5V
C4822 0.01
C4821 16V 10
L4544 JW
IC4517
IN
SW
OUT
Vadj
GND
246mA
L4530 JW
C4686 6.3V 47
C4688 0.1
R4220 1.78k
R4221 1.8k
C4694 10V 1
C4695 4V 100
IC4529
R4862 82k
C4832 0.01
R4863 13k
C4831 0.01
Q4545
Q4546
Q4547
R4890 240
R4888 75
R4877 240
R4889 75
R4887 150
R4893 240
R4895 75
R4894 240
R4896 75
C4824 0.01
L4545
R4892 150
C4823 16V 10
C4825 16V 0.1
R4898 150
R4899 240
R4901 75
R4900 240
R4902 75
R4904 0
C4826 16V 0.1
C4827 16V 0.1
C4828 16V 0.1
R4905 100
R4906 100
R4882 150
R4883 150
R4878 150
R4884 150
R4881 150
R4885 150
R4886 150
OSDR
OSDG
OSDB
OSDYS
OSDYM
RST
9V
L4526 JW
SUB_PB
R4690 220
Q4522
R4698 0
R4201 240
L4528 1.5
L4542 5.6
C4677 22p
R4207 220
R4213 2.2k
C4675 5p
Q4548
C4680 56p
R4209 3.6k
Q4526
R4694 680
C4668 100p
R4356 10k
R4357 10k
Q4549
PB
C4683 16V 1
R4319 220
Q4530
R4324 1k
R4328 0
R4330 0
R4272 33
R4223 10
C4203
R4224 10
C4204
R4225 10
C4205
R4226 10
R4273 33
PR
R4304 220
Q4532
R4321 0
R4307 1k
R4332 0
C4684 16V 1
C4206
C4207
R4331 0
R4274 33
R4227
C4208
R4228 10
SUB_PR
R4688 220
Q4523
R4699 0
R4202 240
L4529 1.5
L4543 5.6
C4678 22p
R4208 220
R4214 2.2k
C4676 5p
Q4550
C4681 56p
R4210 3.6k
Q4527
R4692 680
C4671 100p
R4358 10k
R4359 10k
Q4551
SUB_Y
R4689 220
Q4521
R4697 0
R4200 240
L4527 1.5
L4539 5.6
C4349 22p
R4693 220
R4212 2.2k
C4674 10V 33
C4682 25V 10
C4348 5p
Q4528
C4350 56p
R4211 3.6k
Q4525
R4352 680
C4342 100p
R4532 10k
R4533 10k
Q4529
30MHz
14MHz
Y
Q4534
R4314 220
R4322 470
R4326 0
C4220
C4221
H_DRIVE
H_DAF
EW_DRIVE
MM_FBP
V_DAF
V_DRIVE
R4674 1k
R4672 100
R4671 12k
C4663 0.01
Q4515
R4286 2.2k
R4285 330
Q4201
R4282 15k
Q4542
VSAW
YUV9
YUV8
YUV7
YUV6
YUV5
YUV4
YUV3
YUV2
YUV1
YUV0
YOUT9
YOUT8
YOUT7
YOUT6
YI9
YI8
YI7
YI6
YI5

DG-BOARD 4/5 TNP2AA176 CT-32HC14J/UJ

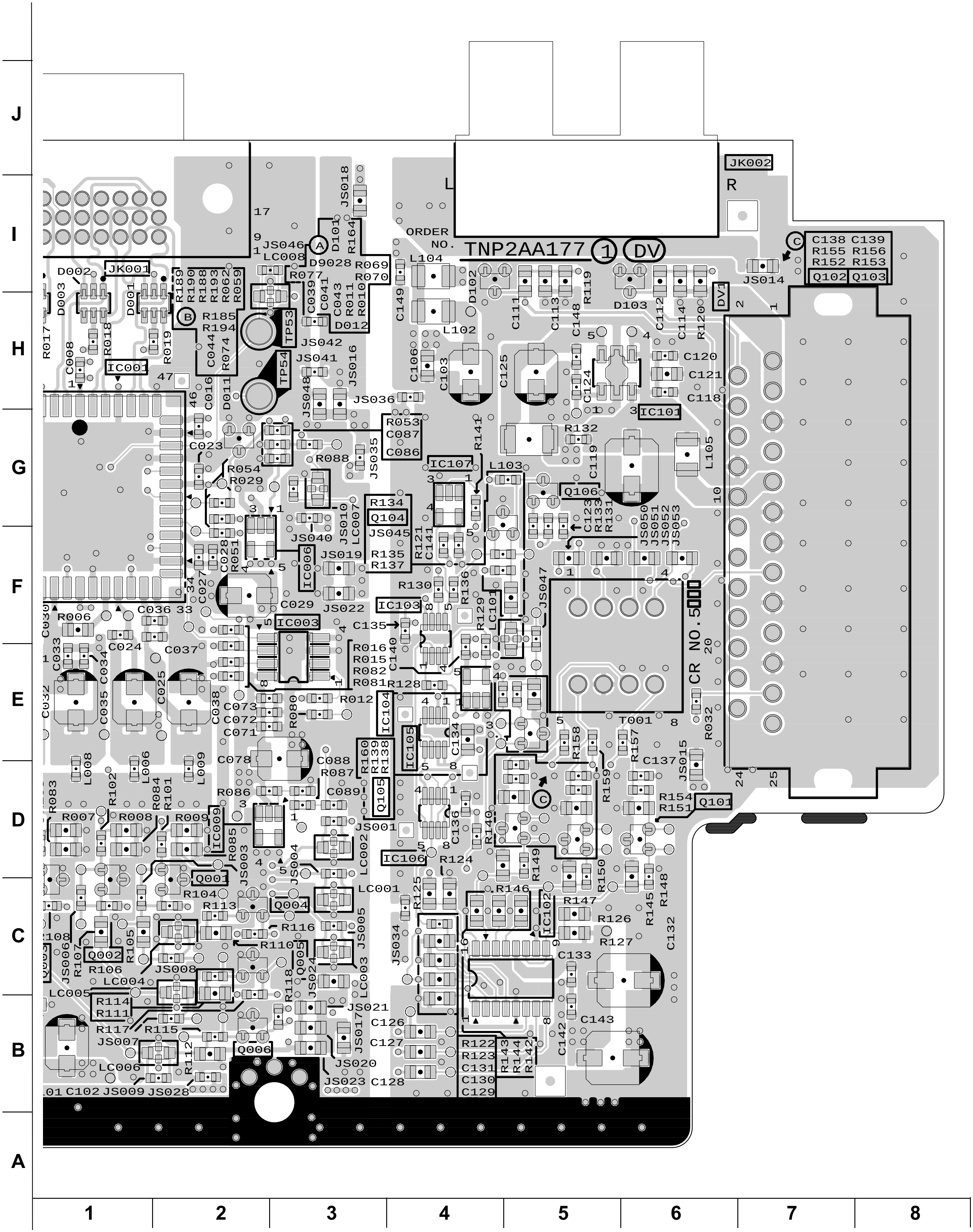

TNP2AA176 DG
IC4526
CONT
Vin
GND
Noise
Vo
R4551 22
C4284 10V 1
C4211 6.3V 22
C4808 0.1
C4282 10V 1
C4280 0.01
C4281 4V 100
5V
3.3V
2.5V
L4536 JW
L4538 JW
C4239 4V 100
C4244 0.01
C4245 16V 10
R4252 220
C4248 4V 100
C4253 0.01
C4256 16V 10
R4258 2.2k
R4340 0
R4254
C4236 10V 1
C4254 10V 1
C4223
C4231
Macro PLL For Mid_CLK
Macro PLL For SGRAM
GC2S
IC4518
< SLAVE > 24 / 26 (TEST=0)
28 / 2A (TEST=1 & YSVM=0)
Macro XTAL
C4264 10V 1
C4259 10V 1
C4265 10V 1
C4260 10V 1
C4266 10V 1
C4261 10V 1
C4267 10V 1
C4262 10V 1
C4263 10V 1
C4268 10V 1
R4368 100
R4369 10k
R4366 0
R4367 0
C4240 10V 1
C4243 10V 1
C4220 10V 1
C4221 10V 1
C4225 10V 1
C4228 10V 1
R4261 100
IC4525
(2M×32Bit) 64MBit SDRAM
R4265
R4264
R4266
R4263
C4278 10V 1
C4285 10V 1
C4275 10V 1
C4287 10V 1
C4279 10V 1
C4289 10V 1
C4286 10V 1
C4288 10V 1
C4283 4V 100
C4218 10V 1
C4212 10V 1
C4219 10V 1
C4222 4V 100
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

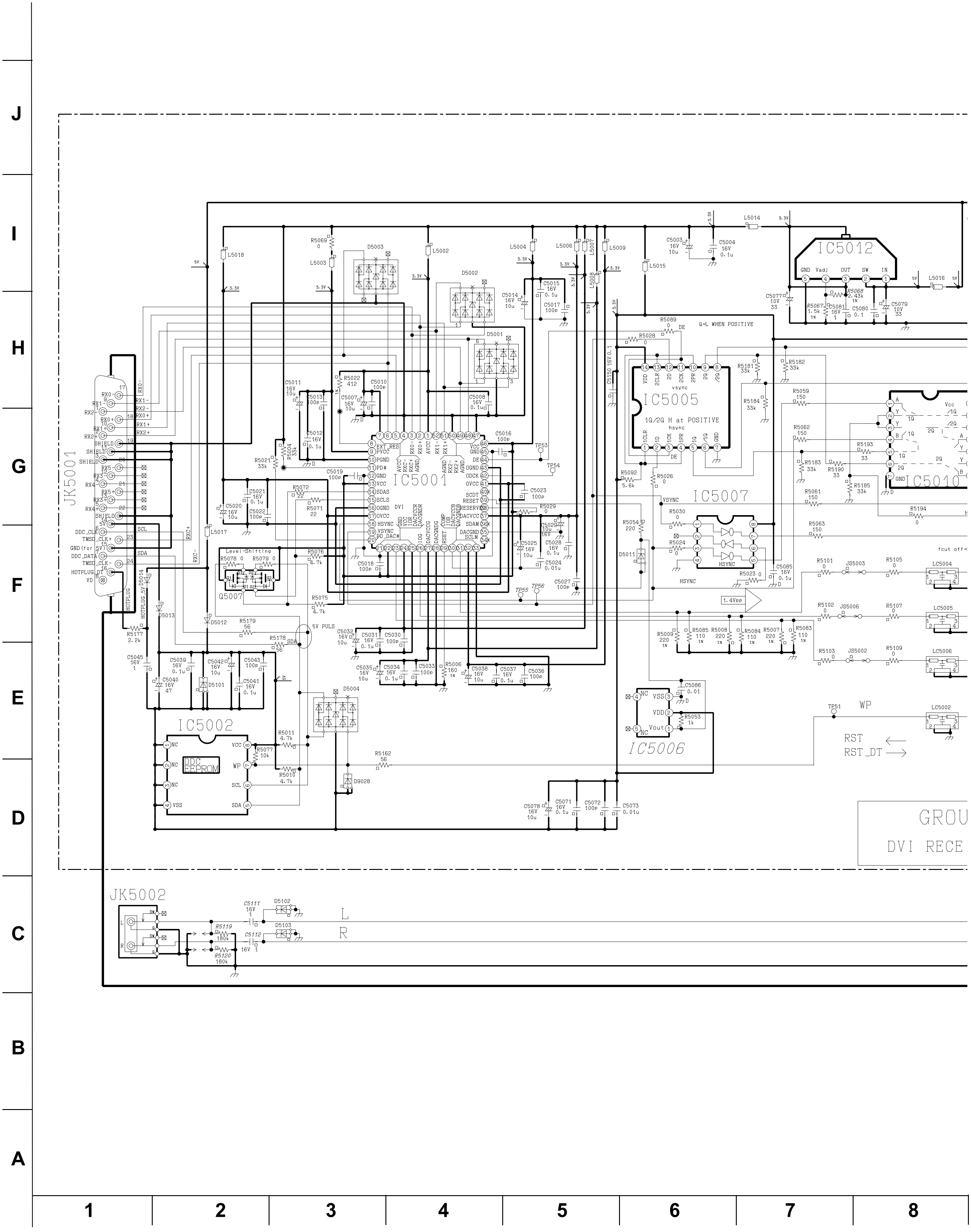

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
JK002
R
L
17
9
1
DV1
1
2
5
10
15
20
24
25
TP001
TP002
TP011
TP010
TP009
TP012
TP007
TP008
TP013
TP006
T001
TP005
TP004
TP003
4
1
8
5
JS039
JS038
JS033
JS032
JS037
JS031
PbF
TNP2AA177 ① DV
SEE REVERSE FOR ORDER NO.
EMMM4
94V-0
CR NO.5

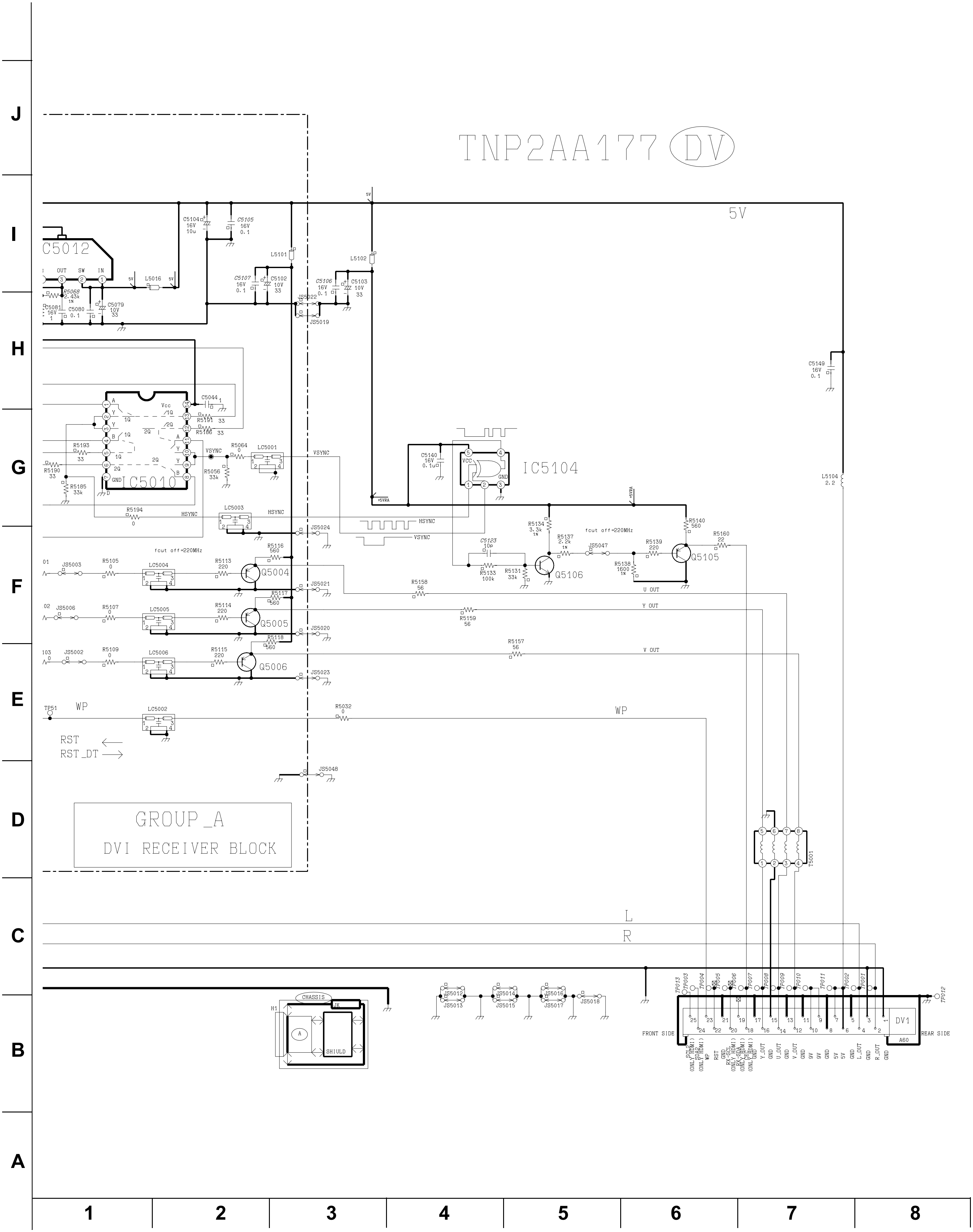

J
I
H
G
F
E
D
C
B
A
17
9
1
24
16
8
JK001
JS039
JS038
JS033
JS032
JS037
JS029
TP55
TP56
PbF
DV
ORDER NO.
M4
-0
JS031
JS026
JS025
1
2
3
4
5
6
7
8

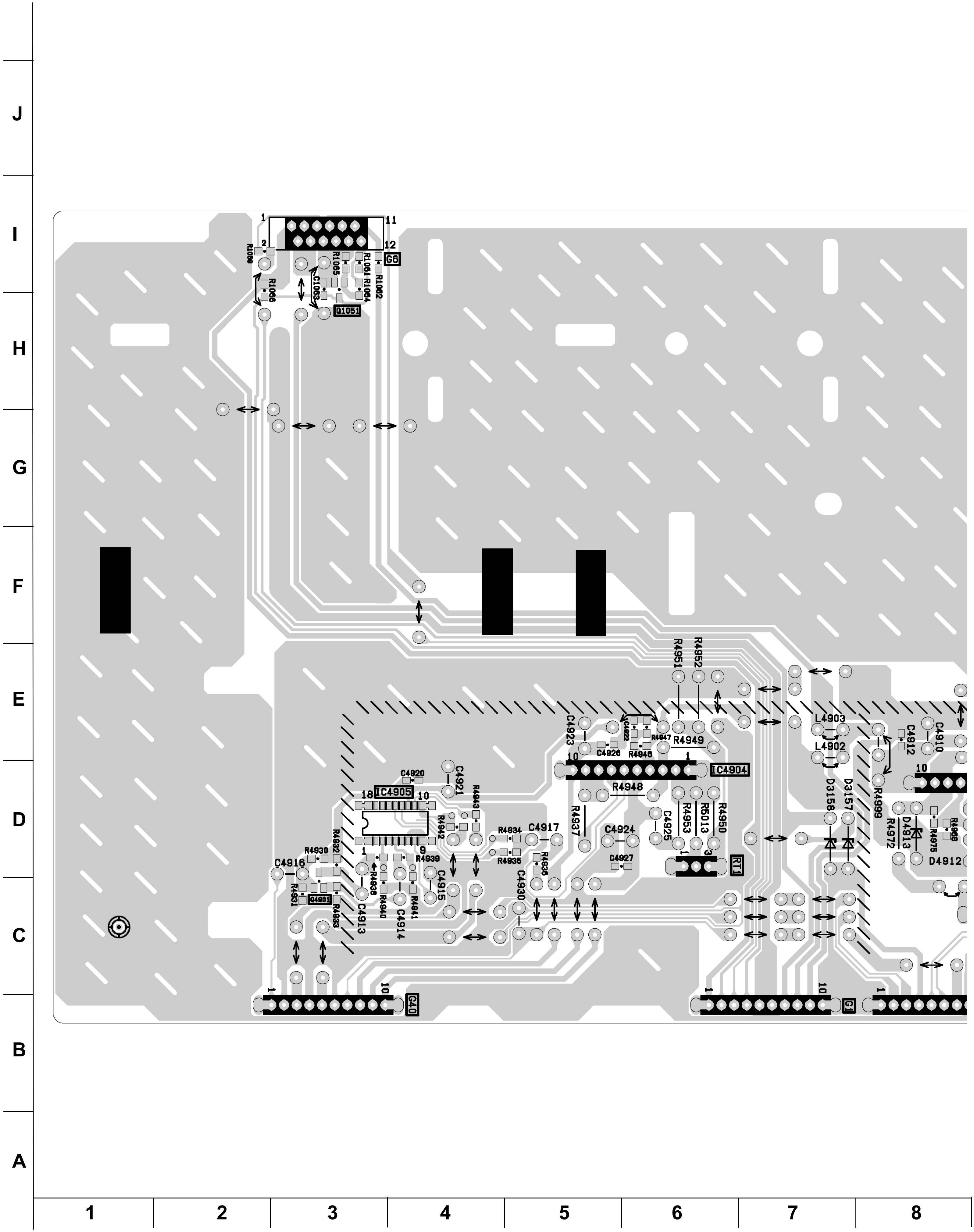

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
ORDER
NO.
TNP2AA177
IC001
IC002
IC003
IC004
IC005
IC006
IC007
IC009
IC010
IC012
IC103
IC104
IC105
IC106
IC107
JK001
TP51
TP53
TP54
Q001
Q002
Q003
Q004
Q005
Q006
Q007
Q104
Q105
Q106
C040
C101
JS012
JS027
L104
L102
L103

DV-BOARD 1/2 TNP2AA177-1 TOP CT-32HC14J/UJ

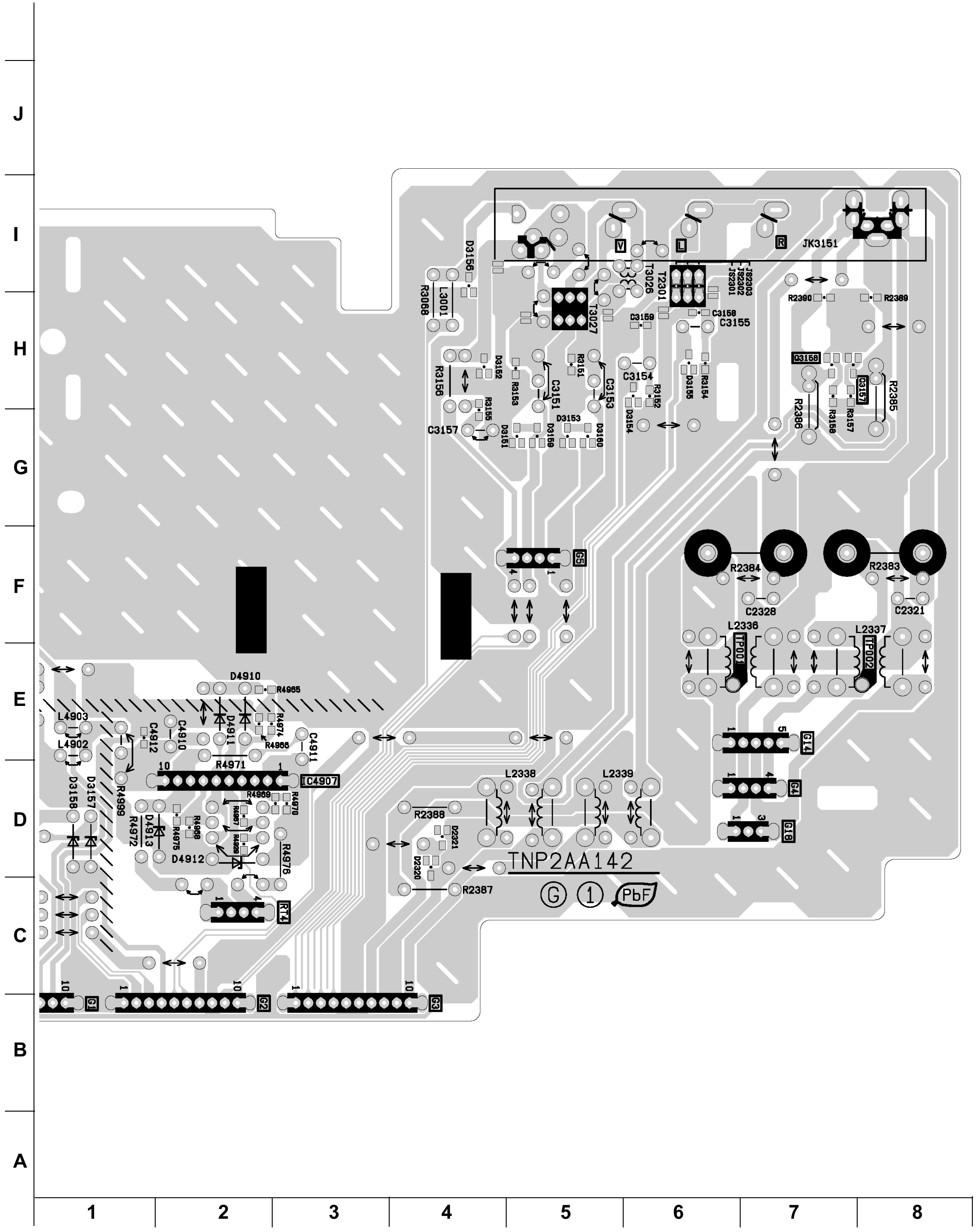

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
ORDER NO.
TNP2AA177 ① DV
JK001
JK002
L
R
IC001
IC003
IC006
IC009
IC101
IC102
IC103
IC104
IC105
IC106
IC107
Q001
Q002
Q004
Q006
Q101
Q102
Q103
Q104
Q105
Q106
T001
DV1
TP53
TP54
CR NO.5
JS014
C138 C139
R155 R156
R152 R153


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
JK5001
RX0-
RX1-
RX2-
RX0+
RX1+
RX2+
SHIELD
RX5-
RX3-
RX4-
RX5+
RX3+
RX4+
5V
DDC_CLK
TMSD_CLK+
GND(for 5V)
DDC_DATA
TMSD_CLK-
HOTPLUG_DT
VD
SCL
SDA
RXC+
RXC-
HOTPLUG
HOTPLUG_5V
IC5001
DVI
EXT_RES
PVCC
PGND
PD#
GND
VCC
SDAS
SCLS
OGND
OVCC
HSYNC
VSYNC
PD_DAC#
SCDT
RESET
RESERVED
DACVCC
SDAM
DACGND
SCLM
ODCK
DE
IC5002
DDC EEPROM
NC
VSS
WP
Level-Shifting
Q5007
5V PULS
IC5005
1Q/2Q H at POSITIVE
Q=L WHEN POSITIVE
vsync
hsync
IC5007
VSYNC
HSYNC
1.4Vpp
IC5006
NC
VSS
VDD
Vout
IC5012
GND
Vadj
OUT
SW
IN
IC5010
Vcc
fcut off=
LC5004
LC5005
LC5006
LC5002
JS5003
JS5006
JS5002
TP51
WP
RST
RST_DT
TP53
TP54
TP55
TP56
D5001
D5002
D5003
D5004
D5011
D5012
D5013
D5014
D5101
D9028
L5002
L5003
L5004
L5006
L5007
L5008
L5009
L5014
L5015
L5016
L5017
L5018
3.3V
GROU
DVI RECE
JK5002
L
R
C5111
C5112
D5102
D5103
R5119
180k
R5120
180k


TNP2AA177 DV
5V
GROUP_A
DVI RECEIVER BLOCK
IC5010
IC5012
IC5104
Q5004
Q5005
Q5006
Q5105
Q5106
T5001
DV1
A60
FRONT SIDE
REAR SIDE
CHASSIS
SHIULD
JK
H1
VSYNC
HSYNC
U OUT
Y OUT
V OUT
WP
RST
RST_DT
L
R
fcut off=220MHz
TP51
LC5001
LC5002
LC5003
LC5004
LC5005
LC5006
L5016
L5101
L5102
L5104 2.2
C5104 16V 10u
C5105 16V 0.1
C5107 16V 0.1
C5102 10V 33
C5106 16V 0.1
C5103 10V 33
C5079 10V 33
C5080 0.1
C5081 16V 1
C5044 1
C5140 16V 0.1u
C5123 10p
C5149 16V 0.1
R5068 2.43k 1%
R5193 33
R5190 33
R5185 33k
R5191 33
R5186 33
R5064 0
R5056 33k
R5194 0
R5105 0
R5107 0
R5109 0
R5113 220
R5114 220
R5115 220
R5116 560
R5117 560
R5118 560
R5158 56
R5159 56
R5157 56
R5032 0
R5134 3.3k 1%
R5137 2.2k 1%
R5133 100k
R5131 33k
R5139 220
R5138 1600 1%
R5140 560
R5160 22
JS5002
JS5003
JS5006
JS5019
JS5020
JS5021
JS5022
JS5023
JS5024
JS5047
JS5048
JS5012
JS5013
JS5014
JS5015
JS5016
JS5017
JS5018
+5VRA
TP001
TP002
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
TP012
TP013
SCL (ONLY HDMI)
SDA (ONLY HDMI)
WP
RST
GND
RX_SCL (ONLY HDMI)
RX_SDA (ONLY HDMI)
GND
Y_OUT
GND
U_OUT
GND
V_OUT
GND
9V
9V
GND
5V
5V
GND
L_OUT
GND
R_OUT
GND
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8

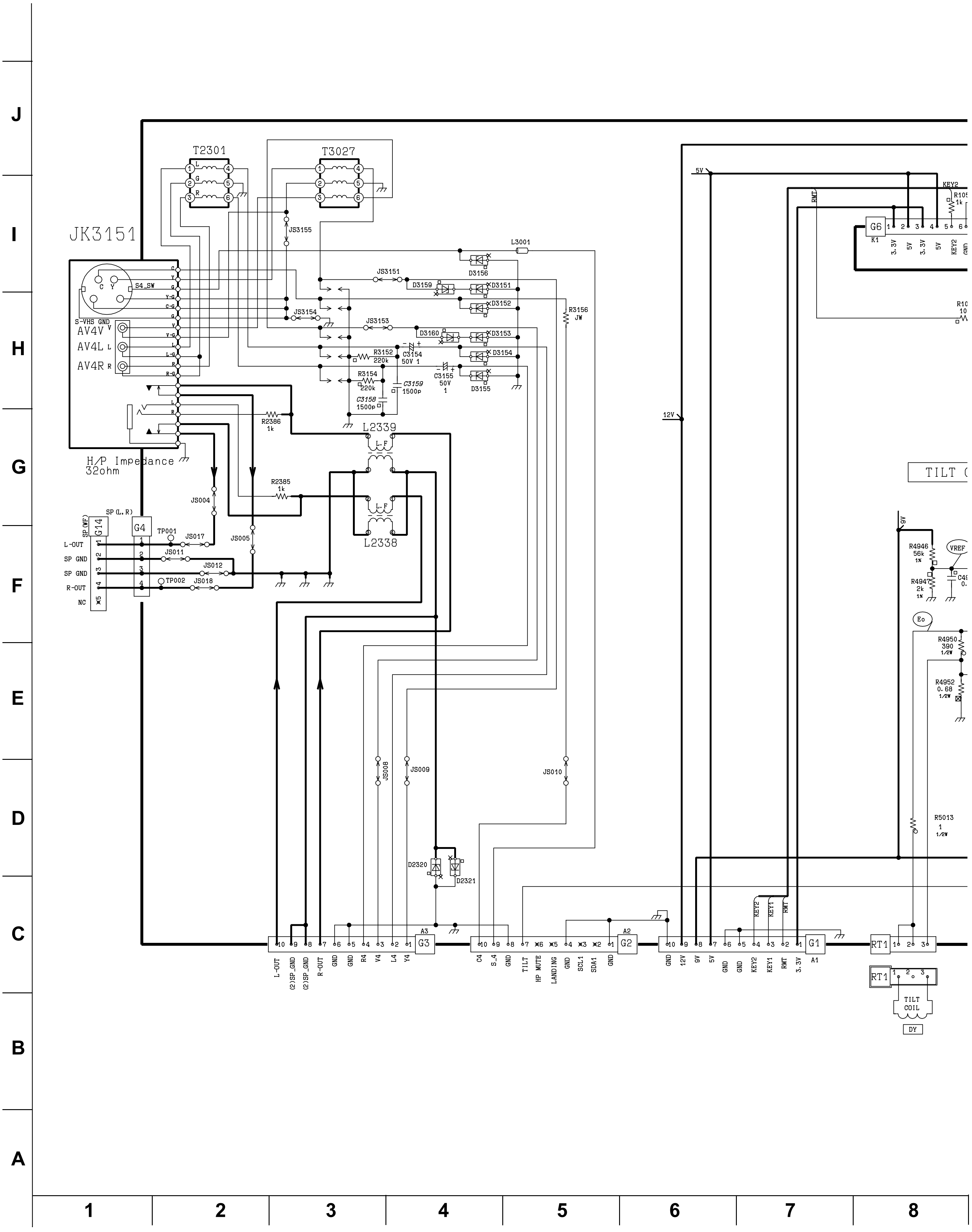

J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
G6
Q1051
R1059
R1056
R1065
C1063
R1061
R1064
R1062
1
2
11
12
IC4905
IC4904
RT1
G40
G1
C4920
C4921
C4916
C4913
C4914
C4915
C4917
C4923
C4922
C4924
C4925
C4926
C4927
C4930
C4910
C4912
R4930
R4931
R4932
R4933
R4934
R4935
R4936
R4937
R4938
R4939
R4940
R4941
R4942
R4943
R4946
R4947
R4948
R4949
R4950
R4951
R4952
R4953
R5013
R4972
R4975
R4968
R4999
Q4901
L4903
L4902
D3158
D3157
D4913
D4912
18
10
9
1
3

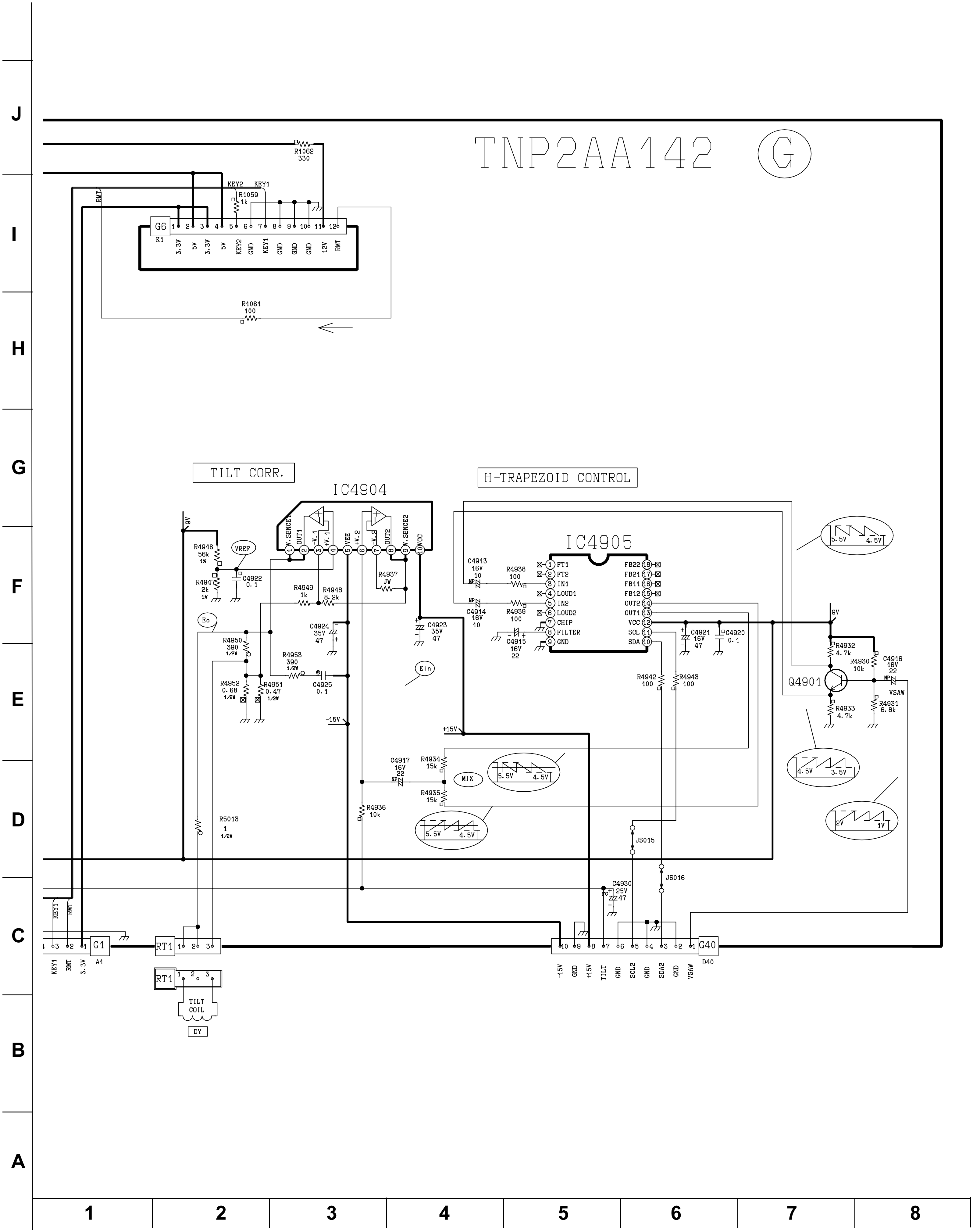
G-BOARD 1/2 TNP2AA142 CT-32HC14J/UJ

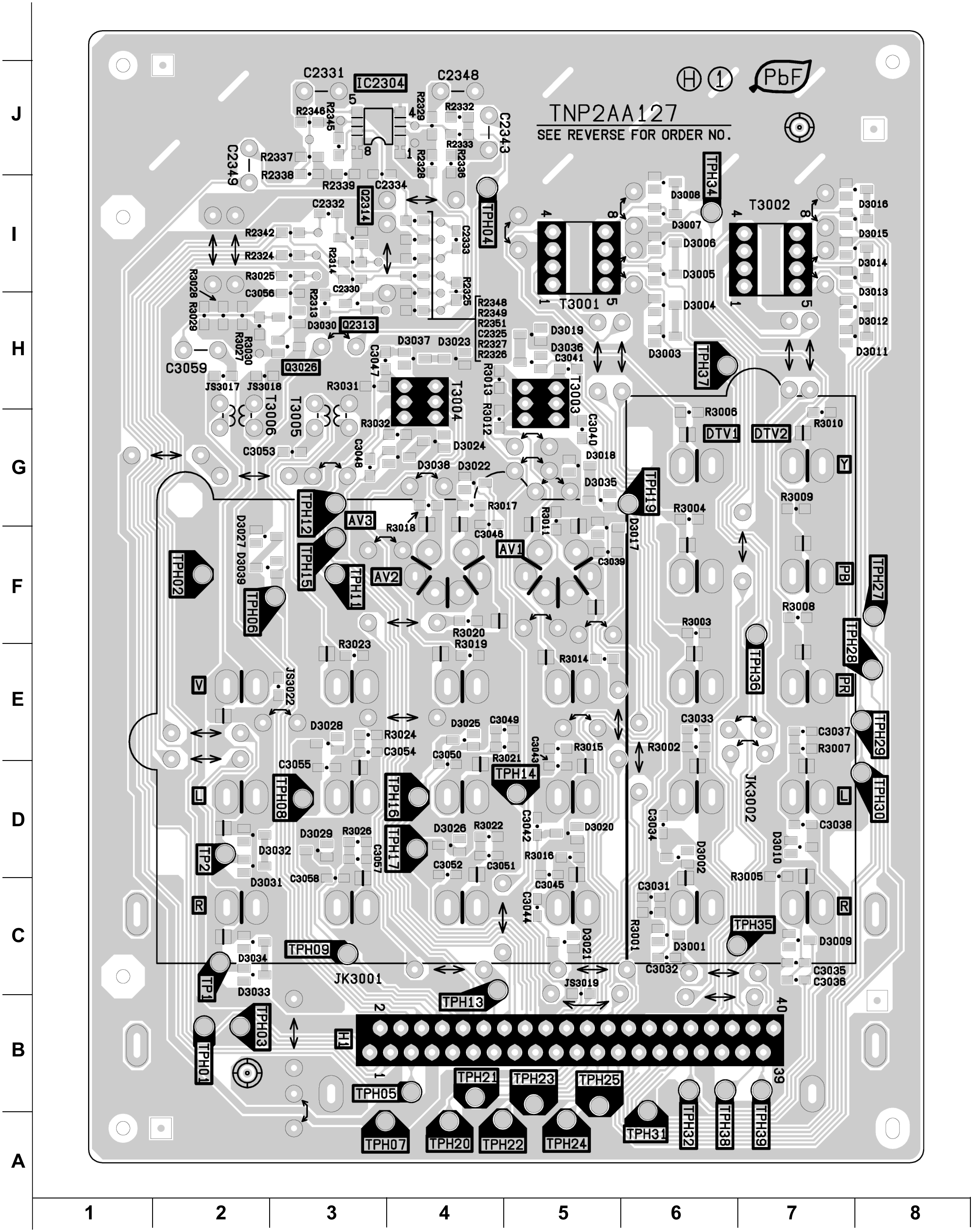


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
JK3151
V
L
R
D3156
R3068
L3001
T3026
T2301
T3027
JS2303
JS2302
JS2301
C3158
C3155
C3159
R2390
R2389
D3162
R3153
R3161
C3151
C3153
R3156
R3155
C3157
D3151
D3169
D3153
D3160
C3154
R3152
D3154
D3155
R3154
Q3158
D3157
R2385
R2386
R3158
R3157
G5
4
1
R2384
R2383
C2328
C2321
L2336
L2337
TP001
TP002
G14
5
G4
G18
3
D4910
R4965
D4911
R4974
R4966
L4903
L4902
C4912
C4910
C4911
R4971
10
IC4907
R4999
D3158
D3157
R4972
D4913
R4975
R4968
R4967
R4969
R4970
R4976
D4912
RT4
L2338
L2339
R2388
D2321
D2320
R2387
TNP2AA142
G
1
PbF
G1
G2
G3

G-BOARD 2/2 TNP2AA142 CT-32HC14J/UJ


J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
T2301
T3027
JK3151
S4_SW
S-VHS GND
AV4V
AV4L
AV4R
H/P Impedance
32ohm
JS3155
JS3154
JS3151
JS3153
L3001
D3156
D3159
D3151
D3152
D3160
D3153
D3154
D3155
R3156
JW
R3152
220k
R3154
220k
C3154
50V 1
C3155
50V
1
C3159
1500p
C3158
1500p
R2386
1k
R2385
1k
L2339
L2338
L.F
JS004
JS005
G14
G4
SP (WF)
SP (L.R)
TP001
TP002
JS017
JS011
JS012
JS018
L-OUT
SP GND
SP GND
R-OUT
NC
JS008
JS009
JS010
D2320
D2321
A3
G3
A2
G2
G1
A1
L-OUT
(2)SP_GND
(2)SP_GND
R-OUT
GND
GND
R4
V4
L4
Y4
C4
S_4
GND
TILT
HP MUTE
LANDING
GND
SCL1
SDA1
GND
GND
12V
9V
5V
GND
GND
KEY2
KEY1
RMT
3.3V
5V
12V
RMT
KEY2
G6
K1
3.3V
5V
3.3V
5V
KEY2
TILT
9V
R4946
56k
1%
VREF
R4947
2k
1%
Eo
R4950
390
1/2W
R4952
0.68
1/2W
R5013
1
1/2W
RT1
TILT
COIL
DY


TNP2AA142 (G)
R1062 330
KEY2 KEY1
R1059 1k
RMT
G6
K1
1 2 3 4 5 6 7 8 9 10 11 12
3.3V 5V 3.3V 5V KEY2 GND KEY1 GND GND GND 12V RMT
R1061 100
TILT CORR.
IC4904
9V
R4946 56k 1%
R4947 2k 1%
VREF
C4922 0.1
W.SENCE1 OUT1 -V.1 +V.1 VEE +V.2 -V.2 OUT2 W.SENCE2 VCC
R4949 1k
R4948 8.2k
R4937 JW
Eo
C4924 35V 47
C4923 35V 47
R4950 390 1/2W
R4953 390 1/2W
C4925 0.1
R4952 0.68 1/2W
R4951 0.47 1/2W
Ein
-15V
+15V
H-TRAPEZOID CONTROL
IC4905
C4913 16V 10 NP
R4938 100
C4914 16V 10 NP
R4939 100
C4915 16V 22
FT1 FT2 IN1 LOUD1 IN2 LOUD2 CHIP FILTER GND
FB22 FB21 FB11 FB12 OUT2 OUT1 VCC SCL SDA
C4921 16V 47
C4920 0.1
R4942 100
R4943 100
5.5V 4.5V
9V
R4932 4.7k
R4930 10k
C4916 16V 22 NP
VSAW
Q4901
R4933 4.7k
R4931 6.8k
4.5V 3.5V
2V 1V
C4917 16V 22 NP
R4934 15k
MIX
R4935 15k
5.5V 4.5V
5.5V 4.5V
R4936 10k
R5013 1 1/2W
JS015
JS016
C4930 25V 47
KEY1 RMT
G1
A1
KEY1 RMT 3.3V
RT1
TILT COIL
DY
G40
D40
-15V GND +15V TILT GND SCL2 GND SDA2 GND VSAW
J I H G F E D C B A
1 2 3 4 5 6 7 8


TNP2AA127
SEE REVERSE FOR ORDER NO.
PbF
IC2304
C2331
C2348
C2343
C2349
R2346
R2345
R2329
R2332
R2333
R2336
R2328
R2337
R2338
R2339
C2334
C2332
Q2314
C2333
R2342
R2324
R2314
R3025
C3056
C2330
R2313
R2325
R3028
R3029
R3027
R3030
D3030
Q2313
R2348
R2349
R2351
C2325
R2327
R2326
C3059
Q3026
JS3017
JS3018
T3006
T3005
C3047
D3037
D3023
R3031
T3004
R3013
R3012
T3003
R3032
C3053
C3048
D3024
D3038
D3022
R3017
R3018
C3046
R3011
TPH04
TPH34
T3001
T3002
D3008
D3007
D3006
D3005
D3004
D3003
D3019
D3036
C3041
C3040
D3018
D3035
D3017
C3039
D3016
D3015
D3014
D3013
D3012
D3011
TPH37
R3006
R3010
DTV1
DTV2
Y
TPH19
R3004
R3009
PB
TPH27
R3003
R3008
TPH28
TPH36
PR
TPH29
TPH30
C3037
R3007
R3002
C3033
JK3002
L
C3034
D3002
D3010
C3038
R3005
R
C3031
D3001
R3001
C3032
TPH35
D3009
C3035
C3036
TPH12
AV3
TPH15
TPH11
AV2
AV1
TPH02
TPH06
D3027
D3039
R3020
R3019
R3023
R3014
V
JS3022
D3028
R3024
C3054
C3055
D3025
C3049
C3050
R3021
C3043
R3015
TPH14
TPH08
TPH16
TPH17
C3042
D3020
D3029
R3026
C3057
D3026
R3022
C3052
C3051
R3016
C3045
C3044
D3021
TP2
D3032
D3031
C3058
TPH09
JK3001
D3034
D3033
TP1
TPH01
TPH03
TPH13
JS3019
H1
2
1
40
39
TPH05
TPH21
TPH23
TPH25
TPH07
TPH20
TPH22
TPH24
TPH31
TPH32
TPH38
TPH39
J
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G
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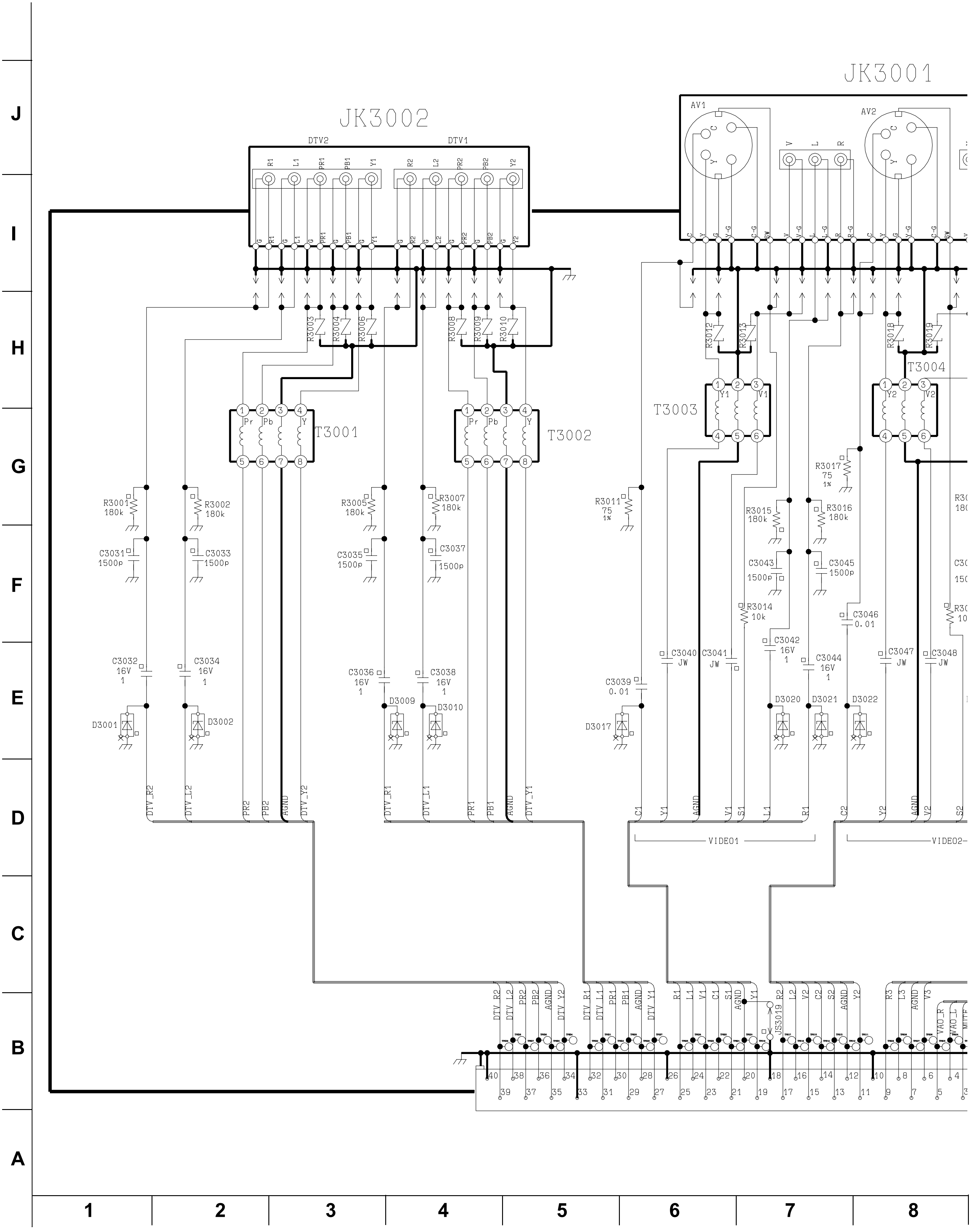
7
8


JK3002
DTV2
DTV1
R1
L1
PR1
PB1
Y1
R2
L2
PR2
PB2
Y2
JK3001
AV1
AV2
V
L
R
C
Y
Y-G
C-G
SW
R-G
L-G
V-G
R3003
R3004
R3006
R3008
R3009
R3010
R3012
R3013
R3018
R3019
T3001
T3002
T3003
T3004
Pr
Pb
Y1
V1
Y2
V2
R3001
180k
R3002
180k
R3005
180k
R3007
180k
R3011
75
1%
R3015
180k
R3016
180k
R3017
75
1%
R3014
10k
C3031
1500p
C3033
1500p
C3035
1500p
C3037
1500p
C3043
1500p
C3045
1500p
C3046
0.01
C3032
16V
1
C3034
16V
1
C3036
16V
1
C3038
16V
1
C3039
0.01
C3040
JW
C3041
JW
C3042
16V
1
C3044
16V
1
C3047
JW
C3048
JW
D3001
D3002
D3009
D3010
D3017
D3020
D3021
D3022
DTV_R2
DTV_L2
PR2
PB2
AGND
DTV_Y2
DTV_R1
DTV_L1
PR1
PB1
DTV_Y1
C1
Y1
V1
S1
L1
R1
C2
Y2
V2
S2
VIDEO1
VIDEO2
R2
L2
R3
L3
V3
VAO_R
VAO_L
JS3019
40
39
38
37
36
35
34
33
32
31
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22
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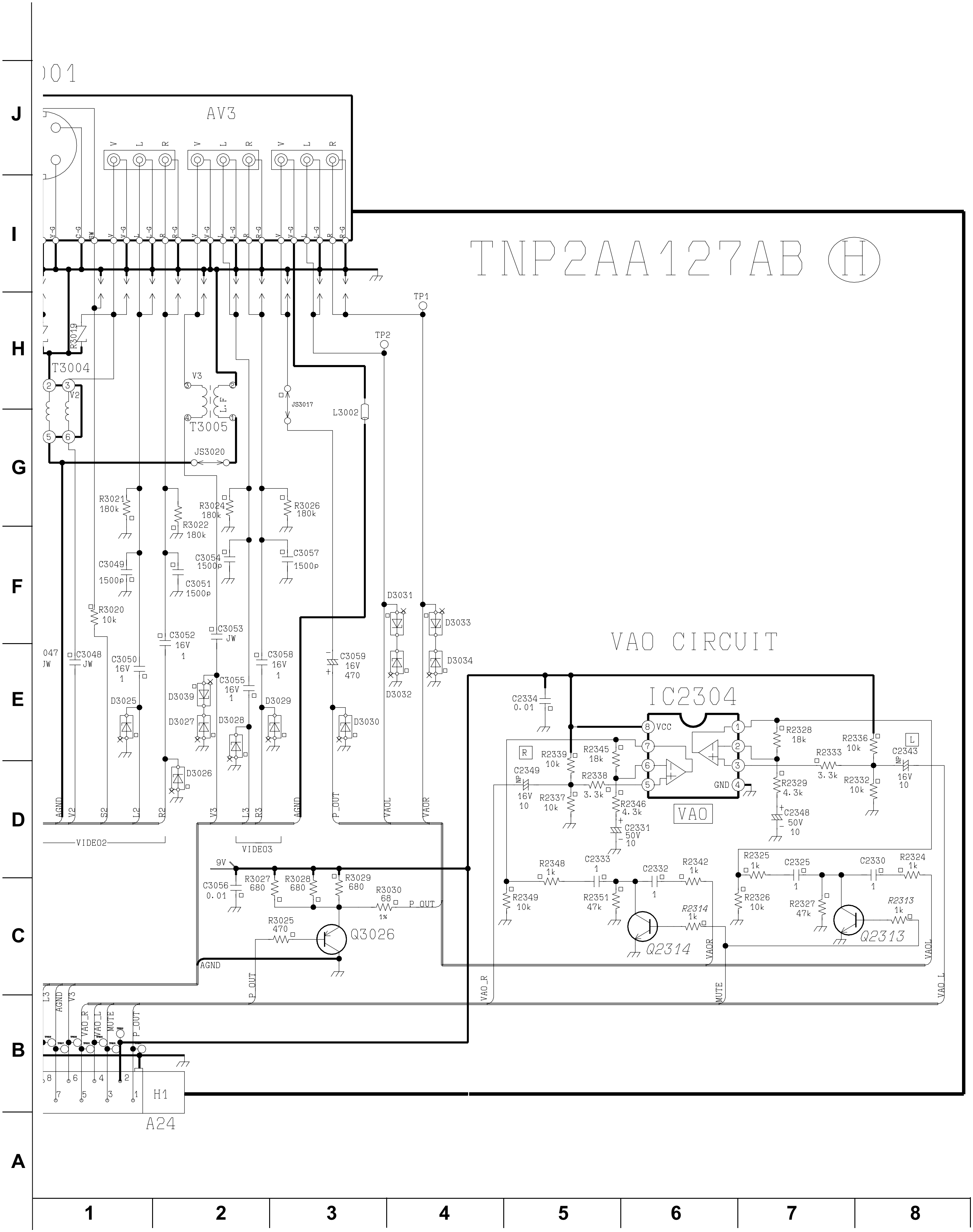

J
I
H
G
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E
D
C
B
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5
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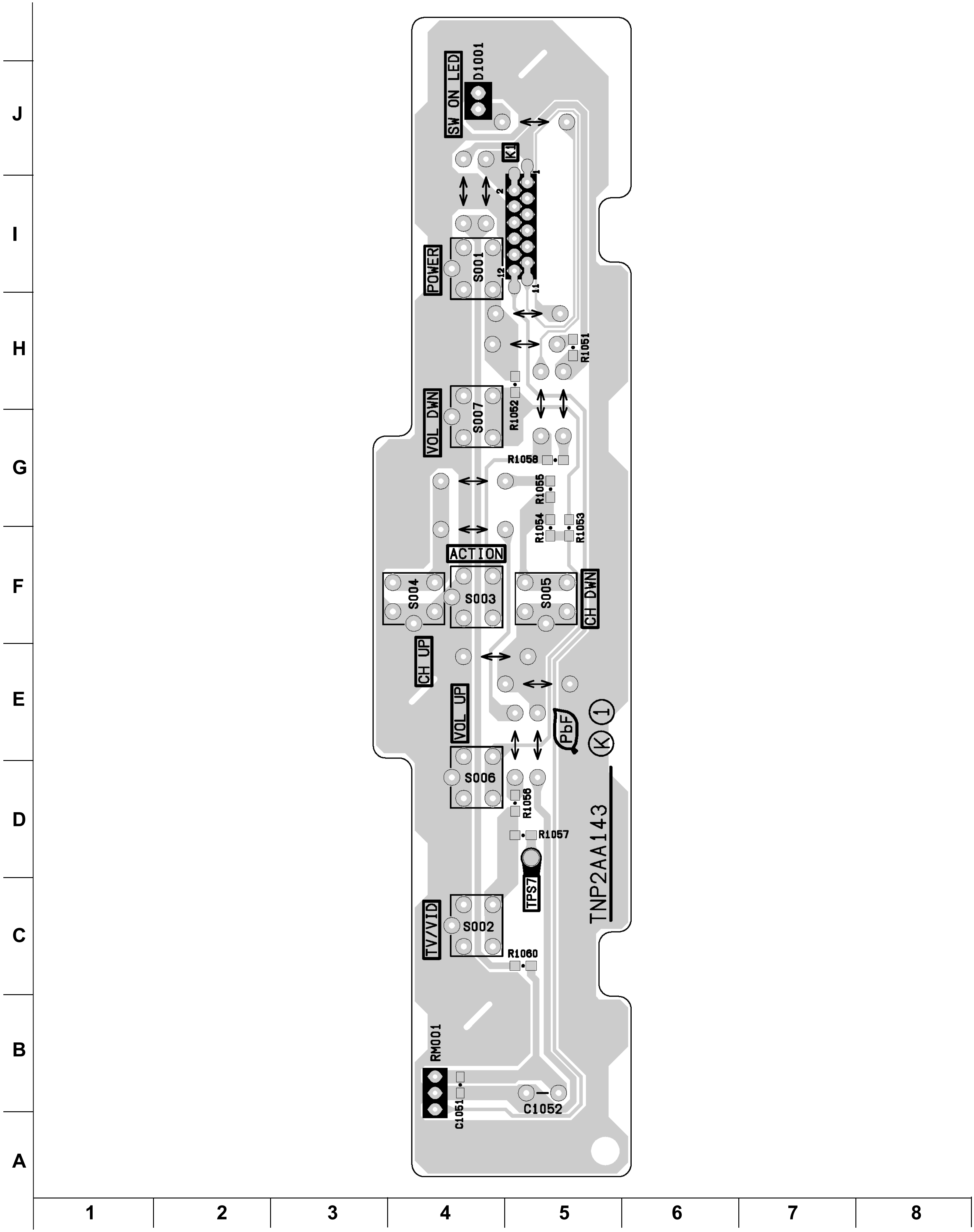
8
AV3
V
L
R
TNP2AA127AB Ⓗ
TP1
TP2
R3019
T3004
V2
V3
L.F
T3005
JS3020
JS3017
L3002
R3021 180k
R3022 180k
R3024 180k
R3026 180k
C3049 1500p
C3051 1500p
C3054 1500p
C3057 1500p
R3020 10k
C3052 16V 1
C3053 JW
C3048 JW
C3050 16V 1
C3058 16V 1
C3055 16V 1
C3059 16V 470
D3031
D3032
D3033
D3034
D3025
D3026
D3027
D3028
D3029
D3030
D3039
VAO CIRCUIT
IC2304
VCC
GND
VAO
C2334 0.01
R2328 18k
R2336 10k
R2333 3.3k
R2332 10k
R2329 4.3k
C2343 16V 10
C2348 50V 10
R2339 10k
R2345 18k
R2338 3.3k
R2337 10k
R2346 4.3k
C2349 16V 10
C2331 50V 10
R
L
VIDEO2
VIDEO3
AGND
V2
S2
L2
R2
V3
L3
R3
P_OUT
VAOL
VAOR
9V
C3056 0.01
R3027 680
R3028 680
R3029 680
R3030 68 1%
R3025 470
Q3026
R2348 1k
C2333 1
C2332 1
R2342 1k
R2349 10k
R2351 47k
R2314 1k
Q2314
R2325 1k
C2325 1
C2330 1
R2324 1k
R2326 10k
R2327 47k
R2313 1k
Q2313
VAO_R
VAO_L
MUTE
H1
A24


J
I
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D
C
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1
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3
4
5
6
7
8
SW ON LED
D1001
K1
1
2
12
11
POWER
S001
R1051
R1052
VOL DWN
S007
R1058
R1055
R1054
R1053
ACTION
S004
S003
S005
CH DWN
CH UP
VOL UP
PbF
K
1
S006
R1056
R1057
TPS7
TNP2AA143
TV/VID
S002
R1060
RM001
C1051
C1052

K-BOARD TNP2AA143 CT-32HC14J/UJ